Medical Times

A Monthly Journal of Medicine, Surgery and the Collateral Sciences

Published by THE MEDICAL TIMES COMPANY at 95 Nassau Street

VOL. XLVIII., No. 9 NEW YORK, SEPTEMBER, 1920 Fifteen Cents a Copy One Dollar a Year

CONTENTS

Established 1872. *Entered at the New York Post Office as Second Class Matter*

Medical Times

A Monthly Journal of Medicine, Surgery, and the Collateral Sciences

Vol. XLVIII., No. 9 | New York, September, 1920 | Fifteen Cents a Copy One Dollar a Year

General Scientific

SARATOGA MINERAL SPRINGS AND BATHS

A Discussion of Modern Mineral Hydriatry at the New York State Reservation.

ARTHUR C. JACOBSON, M.D.,
Brooklyn

Introduction

In the year 1909, the Commissioners of the New York State Reservation at Saratoga Springs were organized under legislative enactment, with power and funds to acquire all of the natural mineral springs and wells of the Saratoga region. Thus was created the State Reservation, which now embraces 540 acres of land and 122 naturally mineralized and widely differing springs and wells, representing an investment of more than $1,500,000. Professional hopes for a regime of rational balneology and mineral hydrotherapeutics at Saratago were realized through this event. Finally, in 1916, the State Conservation Commission took over the control of the Reservation.

The character of the State administration was first revealed to the medical profession in its policy as expressed by the Conservation Commissioner, George D. Pratt, when he insisted that in the more extensive development of the springs no false or extravagant claims should be made, and that any boons that they might have to offer were to be made available in a thoroughly ethical spirit. (Address before Saratoga Springs Medical Society, May 25, 1916.) The enlightened policy of reconstruction thus expressed will permanently mark the conduct of the springs. Through such means the confidence and support of the profession have been gained and will be held.

Before 1909 the Saratoga spa had been all but ruined through commercialism, in the form of charlatanism and empiricism and of pumping and marketing the carbonic-acid gas of the springs in enormous quantities. Similar baths in Germany had been exploited intensively, so that their decided inferiority in CO_2 content ("which is really the stimulating element of the bath"—Baruch) had been cleverly offset by extravagant claims with respect to the cutaneous effects of certain salts in which these German waters are rich. So effective had been the insidious propaganda that balneologists of note lent themselves in good faith to the furtherance of such claims, and, not satisfied with insisting upon the additions of salts to the Saratoga waters, for their alleged synergistic effects, even gave the impression that the salts in question equalled or overshadowed in efficacy the effects of the carbonic-acid gas.

While the Conservation Commission endeavors to carry out, with the utmost conscientiousness, any sort of saline ritual prescribed by "high church" balneologists, there are plain signs of revolt against the consecrated dogma, even though it be embalmed in most of the textbooks. Today, even if the war had never been, American physicians would not send their patients to Germany, to be returned—many of them—as "Nauheim wrecks" (*vide* "Diseases of the Heart," by Mackenzie). They knew that the results at Saratoga, when no saline sophistication is practiced, are equal, if not superior to, those at Nauheim. They know that they are equipped to treat their own hear cases just as well, if not better, than they can be treated in Germany, just as chemists have learned to make our own dyes and drugs; and they also know that as the demands upon the Saratoga spa increase, the State Conservation Commission is prepared to co-operate with them at all points. The professional co-operation which the Commission enjoys is regarded, indeed, as essential, if all of its ambitious plans are to continue to be favorably viewed and backed by the legislative arm of the government.

In the words of Commissioner Pratt, "Saratoga offers its own gift to the world . . . Saratoga's position shall be taken by Saratoga itself, because of the merits that it possesses."

Tyltyl, in Maeterlinck's "Blue Bird," upon discovering the object of his and his sister Mytyl's quest, says to the latter, in the last scene of the last act of the fairy play: "Why, that's the blue bird we are looking for . . . We went so far and he was here all the time. . . . Oh, but it's wonderful."

Saratoga is in the State of New York. For Americans, the blue bird of health is here and not at Bad-Nauheim in the Grand Duchy of Hesse.

General Discussion

The waters which issue from the Saratoga springs are charged with igredients, held in solution, which possess properties serving highly useful purposes in the therapeutic art. Their medical value is fully recognized today by practitioners. This appreciation is due to cor-

CHEMICAL ANALYSES OF MINERAL WATERS AT SARATOGA SPRINGS, N. Y.
Made by Reservation Chemists for the State Reservation at Saratoga Springs.

Chemical Combinations	Emperor	Congress	Patterson	Hathorn No. 1	Hathorn No. 2	Hathorn No. 3	Coesa	Geyser	Lincoln	Peerless	Karista
Ammonium chlorid	9.56	8.41	18.38	30.61	76.49	42.82	28.68	45.88	11.45	17.37	63.38
Lithium chlorid...	21.39	14.04	9.56	20.88	75.59	33.17	44.27	24.22	24.54	20.05	54.16
Potassium chlorid.	236.44	252.11	237.97	786.78	896.28	1,408.89	506.07	260.77	371.41	215.69	845.71
Sodium chlorid....	2,417.78	2,402.63	1,567.60	3,570.62	19,569.88	8,981.88	5,568.32	2,387.19	3,099.78	2,363.80	7,786.98
Potassium bromid.	8.00	12.50	7.50	17.50	72.00	45.00	20.00	16.00	20.00	8.00	50.00
Potassium iodid...	.80	.50	.25	.88	2.80	1.62	2.40	.80	Trace	.40	1.00
Sodium sulphate..	8.84	30.43	83.37	89.45	Trace	3.05	Trace	Trace	Trace	Trace	135.09
Sodium metaborate.	None	Trace	Trace	Trace	Trace	Trace	Trace	Trace	Trace	Trace	Trace
Sodium nitrate....	Trace	Trace	Trace	Trace	Trace	Trace	Trace	Trace	Trace	Trace	Trace
Sodium nitrite....	Trace	Trace	Trace	Trace	Trace	Trace	Trace	Trace	Trace	Trace	Trace
Sodium bicarbonate	35.97	697.49	691.14	1,295.43	1,294.85	1,737.65	614.48	2,047.79	1,346.85	732.39	3,801.88
Calcium bicarbonate	2,106.74	1,852.41	1,531.64	2,352.39	3,721.64	3,785.77	2,508.06	1,718.65	2,030.67	2,110.38	3,462.00
Barium bicarb.....	6.44	2.24	Trace	8.59	38.88	.82	34.31	16.88	14.73	15.11	16.99
Strontium bicarb...	Trace	Trace	Trace	Trace	Trace	Trace	Trace	Trace	Trace	Trace	Trace
Ferrous bicarb....	23.73	60.63	25.06	7.04	14.97	8.34	19.62	14.97	78.04	16.95	22.87
Magnesium bicarb.	878.26	1,115.57	736.13	1,256.73	3,720.97	2,442.90	1,631.42	851.72	1,264.30	922.50	2,371.46
Alumina	4.35	31.18	18.75	24.84	23.59	25.25	3.19	1.59	3.97	7.90	45.73
Silica	15.20	11.40	26.60	29.00	9.80	18.40	9.80	13.40	40.60	19.20	28.20
Total	5,773.43	6,491.54	5,043.95	9,420.69	19,516.34	18,480.69	10,980.62	7,399.16	8,296.34	6,589.83	17,683.89

The results of the analyses are expressed in milligrams per liter. Unless otherwise stated, the waters of all the springs are at normal atmospheric temperature and pressure, supersaturated with carbonic-acid gas.

rect information, knowledge of hydriatic laws and the study of clinical data. It is realized that we possess in these agents valuable additions to our therapeutic resources, and nowadays the profession is devoting much attention to this important branch of treatment. From the class of affections to which hydriatrics is properly applicable, selected cases are regularly referred to Saratoga Springs with definite prescriptions. It is understood by our foremost clinicians that the waters of Saratoga act with special efficacy when taken internally at the springs, and that so far as the carbonic-acid gas bath is concerned, attempts to duplicate it in the home bath tub or hydrotherapeutic institution are sorry makeshifts at the best.

In what way do these highly mineralized, carbonated and radio-active waters act, and how do they produce their therapeutic effects? Their influence is wrought in the same manner as is that of other medicinal agents. No element of mystery shrouds the action of the Saratoga waters, and the good effects obtained from their use are easy to explain. There is a fixed scientific basis for mineral hydrotherapeutics. Our position is no longer empirical. The present status of mineral hydriatrics is a dignified and important one. Baruch declares the use of water in disease to be the most orthodox therapeutic measure in medicine. We shall endeavor in the pages that follow to elucidate the action of the Saratoga waters in disease in accordance with the teachings of the world's most noted medical scientists.

The mineral constituents of all of the Saratoga Springs are substantially the same, but their proportions in different springs and their consequent physiological effects vary greatly, as will be observed from their analyses.

All of the mineralized waters of Saratoga are highly charged with carbonic-acid gas, the supersaturation of the Lincoln Spring water being about 40 per cent. Regarding the actual mineralization, in quantitative terms, it runs from a little over 3,000 to nearly 19,000 milligrams of total solids to the liter, the content of each spring remaining approximately constant.

All precautions against bacterial contamination of the Saratoga waters are taken by the Commission, which maintains a fully equipped laboratory for this purpose.

The indiscriminate use of these waters by the public is systematically discouraged by the State Conservation Commission. Signs are posted at the springs warning people to use the waters sparingly, except under the direction of a physician.

Radio-Activity

With respect to the radio-activity of these waters, which has been attested by the United States Geological Survey, no therapeutic claims can be made at the present time, becaues of the unsettled principles involved. Hinsdale suggests that it may be radio-activity that accounts for the different effects of the waters at such spas as Saratoga from the effects of waters which have been given, artificially, precisely similar chemical constituents according to a standard analysis. According to Bergell and Bickell, the presence of radio-activity in some way favorably influences the petonizing process in digestion. It may be true that, according to Tousey, radium emanations will effect the solution of uric acid and other purin bodies, and that radio-active waters are beneficial in gout and rheumatism and effective in reducing elevated blood pressure, but such effects cannot be conscientiously predicated in the case of the Saratoga waters, because the radio-activity would not seem to be sufficiently marked. The Saratoga waters are very effective therapeutically, but this is accountable upon other than theoretic grounds pertaining to their radio-activity. Much of their radio-activity is positive and constant, since it is due to radium salts and not simply to absorbed emanations.

The same remarks apply to the invocation of the mysterious quality of radio-activity in explaining the efficacy of mineral baths. Mineral-water baths afford a great opportunity for charlatanry and claims regarding "electric" and "magnetic" action. Huggard says: "There is not a particle of scientific evidence to warrant the belief in any greater electric action in the mineral baths at spas than in baths taken quietly in one's own room. The radio-activity of mineral waters now occupies much attention, but, up to the present, we have only speculations as to its therapeutic influence."

INTERNAL ADMINISTRATION

Alkaline Waters

Regarding the effects of carbonic-acid gas, the drinking of water charged with this agent promotes the flow of saliva, allays nausea and general gastric irritability, aids digestion, assists in maintaining the alkalinity of the body fluids, and promotes diuresis. The remarkable effects of this gas upon the skin will be dwelt upon later, since it is to such effects that the Saraotga baths chiefly owe their extraordinary reputation.

We possess in the alkaline waters of Saratoga, rich in the calcium and sodium bicarbonates, a valuable antidote to the acidosis encountered in diabetes, in the atrophic cirrhoses of the liver, in advanced anemias, in the acid poisonings due to the end-products of catabolism in large eaters of meat, in the food intoxications of children and in chronic acidosis associated with various forms of malnutrition. A course of these alkaline waters fortifies patients before operative procedure against the occurrence of acidosis incidental to anesthe-

sia. Rosewater has shown that the acidosis due to drug addiction reponds to alkaline therapy.

The essentially alkaline character of our intake should be preserved in a pronounced degree. The use of such alkaline mineral waters as those of Saratoga aids in keeping the alkaline balance predominant. "The human tissues in general require, as constant conditions of their life, that they be bathed in an alkaline fluid. This requirement would seem to be an inheritance from the primordial era when our remotest unicellular ancestors began life in the ocean. When, in due time, our ancestors emerged from the ocean to live on dry land, they dragged with them a bag of alkaline fluid not much dissimilar to sea water and at the present time our body appears as a bag of such fluid with the tissues floating around in it. . . . Acidosis constitutes as universal and constant a chemical menace to the life of our tissues as bacteria do a biologic one" (Cornwall).

In the acidosis encountered in the nephropathies, the use of the alkaline Saratoga waters would not be advisable, because of the harmful effects of the chlorids which these waters contain. The nephritic at Saratoga should drink moderately of the non-mineralized Ferndell water, because of his chlorid intolerance. According to Kellogg and Strauss, an abundance of fluids in nephritis assists in ridding the body of accumulating poisons. Baruch, however, advises moderation in this respect. What the chronic interstitial type requires is the CO_2 baths, which are most efficacious in this condition.

Saline waters should never be administered to patients with nephritis. They should be avoided in any case of albuminuria.

The alkaline waters are of great value to dyspeptics with strongly acid urine, to gouty and rheumatic subjects, to patients with biliary disorders, and to patients having eczema or psoriasis with acid tendencies. Particularly in the lowered blood alkalinity of gout, certain types of rheumatism, and diabetes, are these alkaline waters useful. In hyperchlorhydria and gastric ulcer they are especially valuable.

The experiments of Klemperer and von Noorden on uric acid calculi already excreted, showing that urine alkalinized by mineral water will dissolve stones, are interesting but not of so much importance as the clinical fact that the ingestion of the alkaline Saratoga waters is followed by an increased excretion of uric acid.

The calcium salts of the alkaline mineral waters are eagerly sought by the acids of imperfect digestion. The latter readily combine with the bases thus furnished, and in this manner obviate union with similar bases found in bone and the cartilages of joints. Von Noorden has shown how the combination with phosphoric acid prevents the latter's transference to the kidneys and urine, with resulting alkalinity of this secretion.

The alkaline mineral waters are credited with favorable results in pyelitis, chronic urethritis and rachitis. Calcium therapy also finds a place in the treatment of tetany, purpura, hemophilia, urticaria, tuberculosis and the dental caries of lactation.

Because of the power possessed by alkaline salts in aiding oxidation, these waters are used in cases where the effete matters of the body seem to escape only partlyy oxidized, and where the kidneys, and perhaps the liver, seem torpid (Hare).

The Geyser, Emperor and Peerless waters of Saratoga are notably alkaline and contain but a small amount of chlorids, while the Lincoln and Hathorn No. 1 are strongly alkaline, but contain proportionately more salines.

Saline Waters

With respect to the waters impregnated with chlorids, we may say that their empirical use is a thing of the past, since the flood of light thrown by von Noorden and Dapper upon the rationale of saline therapy in gastric disorders. They obtained excellent therapeutic results both in cases of subacidity and of hyperacidity. In all of these cures, says von Noorden, the prescription of the saline water is only one link in the chain of rules and regulations that are given to the patient, but he declares the water to be a very strong link in this chain, and one that is of paramount importance.

Von Noorden speaks of the "specific effects" of the saline waters on gastric disorders, and makes the following general remarks:

"Uniformly favorable results are almost invariably obtained in cases of hyperacidity occuring in nervous individuals, also in hyperacidity occurring in cases of acid catarrh of the stomach and atony of the stomach. Especially favorable and rapid results are obtained in those cases of dyspepsia that occur in persons who have overexerted themselves mentally. Whenever the patients were instructed to eat abundantly, and especially to eat large quantities of fat, in addition to taking the saline mineral waters, the therapeutic results were so good that they could be considered brilliant, for in all of these cases the gastric disturbances were cured, and, in addition, the patients gained in weight and strength. It is very possible that in a healthy subject the effect of saline mineral waters is exercised only in one direction, namely, toward decreasing the hydrochloric acid of the stomach. When the stomach is diseased, however, this reaction cannot be considered to be so simple, for here apparently certain factors become operative that are altogether independent of the secretion of hydrochloric acid, and these unknown factors precisely produce the excellent therapeutic results that are obtained both in cases of subacidity and of hyperacidity. We are forced to abandon such routint statements as that sodium chlorid increases or decreases the hydrochloric acid of the stomach and we must be particularly careful not to measure our therapeutic indications according to such formulas. Otherwise, one incurs the danger of depriving the patients of a very useful treatment for the sake of living up to the postulates of such a formula. To argue, as is done, that because simple saline waters are beneficial in subacidity, therefore they are contraindicated in hyperacidity, is a form of cleverness which rejects facts and opposes the free growth of knowledge."

Under saline therapy, the metabolism of proteids remains at a favorable level (is not accelerated), so that no serious nutritive disturbance results from energetic reduction cures, even in cardiac patients. Such patients, says von Noorden, without exception grow stronger under saline therapy and more capable of performing their labors.

Von Noorden believes that the use of saline mineral waters possesses great advantages in the therapy of the uric acid diathesis. The cardinal feature of this condition is that the elimination of uric acid is at fault. That method of treatment is he best which causes the maximum excretion of uric acid. Saline mineral water increases uric acid excretion and decreases its retention. These facts are so convincing, says von Noorden, that more attention should be paid to the use of saline mineral waters in the treatment of gout. It is a remarkable fact, he points out, that particularly in those conditions in which we desire an increase in the uric acid excretion for therapeutic purposes, that is, in gout, this desirable effect is invariably obtained.

Voh Noorden summarizes his conclusions regarding saline therapy as follows:

1. In numerous cases of gastric disorders, particularly in gastric catarrh, the use of saline mineral waters leads to an active and permanent increase in the production of hydrochloric acid.

2. In numerous cases of gastric disorder accompanied by hyperacidity (particularly in nervous dyspepsia) the moderate use of saline mineral waters leads to a decrease of the hydrochloric acid production and a decrease of the subjective symptoms.

3. The administration of saline mineral waters does not call for any particular diet. To adhere to such dietetic schemes as the ones arranged in the different watering places is an antiquated procedure and one that must be considered a dogmatic method of treatment that may be deleterious to the patient. There is, above all, no reason why large quantities of fat should not be given in suitable cases to patients who are drinking certain mineral waters. Nor is there any urgent reason for forbidding the use of raw fruits, vinegar, salads, etc., in specified cases.

4. The ingestion of large quantities of saline mineral water does not interfere with the absorption of the food, in particular the absorption of the fats; this is demonstrated by numerous investigations on patients.

5. The metabolism of the proteids is not increased by saline mineral waters, so that these waters can be employed even in those cases in which it is important to maintain the albumin content of the body, that is, in patients undergoing a reduction cure.

6. The excretion of uric acid is slightly increased when dilute saline mineral waters are taken. This increase in the uric acid excretion is sufficiently marked to justify the use of such waters in the treatment of uric acid retention.

The following Saratoga waters are notably saline: Coesa, Karista, Hathorn No. 2 and Hathorn No. 3.

Chalybeate Waters

As an hematic reconstructive, the waters containing the highest iron component are employed and have proven their value as an auxiliary to general hygienic and dietetic measures. Natural chalybeate waters are more beneficial in anemia than the various pharmaceutic preparations of iron. Ferrous carbonate cannot well exist artificially; in its most available form it is found in highly carbonated (supersaturated) solution, as in the Saratoga waters, secure from the oxidizing effect of air. Congress water has proven effective in catarrhal conditions of the intestines, due to its relatively large calcic content. It causes intestinal stasis after the fashion of "chalk mixtures," albeit this effect is all out of proportion to the small actual calcic content. Patterson also has a similar effect, but is much feebler.

Cathartic Waters

The cathartic saline alkaline waters are used with great success in the treatment of constipation and are devoid of the evils of drugging, no atonic effects following their use. While the laxative elements exist in small quantities a (pint of Hathorn No. 2 contains only 21 grains of magnesium bicarbonate), yet these waters are effective. Without doubt, the presence of chlorid of sodium and the alkaline bicarbonates held in solution by carbonic-acid gas is accountable for the efficacy of the waters. You cannot have artificially such combinations as exist in natural waters like those of Saratoga, because the bicarbonates of the latter are produced through the action of a highly carbonated water for a long period of time under exceptional conditions of pressure.

The eliminative effect of such waters as Hathorn No. 2 is to be sought in cases of intestinal autointoxication, supplementing appropriate dietetic regimen. In biliary stasis this water acts especially well.

Aside from specific effects, the free imbibition of the Saratoga water, which can be effected at a spa when it cannot be at home, does great good through washing out deleterious nitrogenous products (Oppenheim) and favorably influencing circulation, glandular secretions, peristalsis and metabolism. Most toxin-saturated persons drink too little, and this is particularly the case with women—with the result that constipation, acid and concentrated urine and irritability of the bladder ensue. In the case of cardiac patients, improved elimination must be an essential factor in the therapeutic scheme.

The Saratoga Effervescent Bath

In the Saratoga effervescent bath, the circulatory reactions produced by an ordinary water bath at the same temperature are augmented by powerful vasomotor effects of a reflex character resulting from the stimulation of the skin by the carbonic-acid gas with which the water is supersaturated, and by direct cardiac and vascular effects as a result of the contracting influence of the absorbed CO_2 upon the ventricle and the unstriated muscular coats of the arterioles (Baruch). The cutaneous circulation is highly stimulated without provoking undesirable thermic reaction, congestion of the viscera is relieved, the activity of the "peripheral heart" greatly lessens the labor of the central cardiac mechanism and secures a better distribution and more active movement of the blood throughout the body, and the skin is excited to increased eliminative and respiratory activity, thus lessening renal labor.

The clinical indications for the Saratoga effervescent bath are cardio-vascular disorders, early arteriosclerosis, depressed types of neurasthenia, the anemias, gout arthritis, rheumatism, diabetes, gastropathies, Basedow's disease, congestive dysmenorrhea, disturbances of the menopause, exudates in the pelvis, chlorosis, convalescence after acute disease—particularly influenza—mild types of depressive psychoses, and nephritis.

Saratoga Cardiac Therapy

The Saratoga effervescent bath finds perhaps its chief usefulness in cardiac diseases, and we shall discuss at some length the Saratoga system of heart training postulated upon the remarkable physiological effects of this type of bath.

Generally the bath should be taken two or three days in succession each week, then one day's respite be allowed. With persons in good strength, four or five successive baths may be given. Where there is positive insufficiency, it is best to give the baths every other day at the beginning of the course.

The duration of the bath varies from five minutes in the beginning to fifteen minutes at the end of the course. Beginning at 94° F. the temperature may be lowered one degree at a time, finally reaching 86° F., which is the lowest temperature prescribed by most authorities. After the first three baths, the duration may be increased to ten minutes, if the symptoms have been relieved. The first bath should contain less gas than subsequent ones. The maximum supersaturation of gas in the Saratoga waters is 40 per cent. The physician will, therefore, designate the amount of gas required by him in each bath for the patient in terms of percentages up to 40 per cent, as 10 per cent, 15 per cent, 20 per cent, etc. The method of prescription would be as follows:

Bath No. A: Gas b per cent, Temperature *n*°.
Duration c minutes, Rest d minutes.

The sodium chlorid content in the Saratoga bathing waters (Lincoln Spring) is about 1.6 pounds to a 60 gallon bath. There is no calcium chlorid present.

The available gas supersaturation of the Saratoga waters is somewhat more than one and a half times greater than the waters of Nauheim.

Such a definite method of prescription as that given above will greatly facilitate the administration of the baths at Saratoga, and eliminate the confusion caused by cryptic methods.

The physician should definitely state in his prescription the length of time he desires the patient to rest after the bath.

The increased activity of the surface circulation, through dilatation of the cutaneous blood vessels, produces a powerful effect upon the heart. Hare states that the cardiac effect is also due to reflex causes. The effervescent bath at a neutral temperature accomplishes much the same reddening results as the Scotch douche, with the advantage that the extreme temperatures are avoided, a matter of vast moment in cardiac weakness and dilatation, since in such clinical circumstances very hot and very cold baths must be avoided. A hot bath first excites harmfully and then depresses the feeble heart. A cold bath damages because of the tax put upon the heart through the contraction of the cutaneous vessels before the appearance of reaction, and if renal disease complicates, injury may be done because of temporary congestion resulting from the vascular contraction.

Through the prompt warming of the skin brought about by the strong circulatory effect,, the Saratoga effervescent bath enables the patient to tolerate neutral, and later lower temperatures (94 F. down to 86 F.), without shivering, and thus markedly tonic effects upon the heart and circulation are secured. The Saratoga effervescent bath produces a digilatis-like result without cumulative toxic effects.

Excellent results are obtained even in extreme cases of cardiac disease with dilatation. Dropsy disappears, large livers diminish in size, insomnia and dyspnea improve, and the heart is reduced in area, the apex retracting sometimes as much as three-quarters of an inch and the diameter lessening one inch, as shown radiographicaly by Hinsdale.

When compensation is actually broken, these baths are dangerous, owing to the production of syncope. In such cases rest in bed and other measures are necessary prerequisites.

In cardiac neuroses and functional disorders dependent upon lack of vasomotor tone, they are serviceable.

The Saratoga effervescent bath must not be looked upon as a sort of last resort in cardiac disease. Such cases should be referred for treatment before the graver manifestations appear. In valvular disease with good compensation, they insure the maintenance of the heart's functional integrity. Where the compensation is maintained with difficulty and in the early stages of compensatory failure, very striking results are secured. In the great majority of cases the effect of the baths is to reduce high blood pressure and this effect is observed from the early part of the course. When a slight rise occurs, it is but temporary, lasting only until the adjustment of the circulation after the immediate effect of the bath is over. As the baths are reduced in temperature, favorable effects are increased.

The Saratoga effervescent bath provides gymnas exercises for a weakened heart. Its correct admin tration is a matter of art, the exercise given in ea bath of the series being carefully kept within t power of the heart to accomplish. The number a frequency of the baths must be arranged entire in accordance with the effects of each partial seri

All the familiar phenomena of cardiac disease such as flutter, fibrillation, pulse deficit, tachycard and block are permanently benefited. Hyperpies is corrected and toxemia is reduced through the active elimination which is encouraged.

The marked slowing of the pulse produced by the Saratoga effervescent bath is due to a lengthenin of the diastole. This lengthening permits of a mor complete filling of the coronary arteries. The increased activity of the coronary circulation improve the nutrition of the myocardium, thereby adding t its integrity. The force of the systole is increased thus meeting the requirements of the better-filled ventricles. The strengthening of the myocardium is permanent.

In cases of myocarditis, diuresis is induced and the total solids are increased, conditions which are generally substandard in such circumstances.

Many gastric and hepatic conditions which masquerade as primary conditions are really circulatory disorders. The shifting of the splanchnic blood current to the peripheral circulation, induced by the bath, clears up many of these troubles. The greater activity of the bowels in the course of the treatment is doubtless due to the splanchnic change. Pulmonary stasis also yields to the general equalization of the circulation.

The treatment tends ultimately to bring blood pressure to a normal point, whether it be high or low. Cardiovascular strain is relieved and subnormal endovascular pressure, associated with flaccid, toneless arterial walls, is heightened.

Even old valvular murmurs frequently disappear entirely under treatment by the Saratoga Effervescent Bath. This sounds incredible, but Schott has reported the same findings at his spa, using a somewhat similar type of bath.

These baths are contraindicated in angina pectoris and in advanced aortic disease.

Academic criticism of this bath, hypothesizing baneful effects through absorption or inhalation of the gas, has been met by Baruch with the reminder that it is not so much the presence of CO_2 in excess in cardiac cases as it is the deficiency of oxygen which accounts for signs like cyanosis. Proper ventilation of the bath rooms at the State Reservation completely meets the requirements. So far as absorption through the skin is concerned, Baruch has emphasized the finding of Winternitz that by decreasing the saline content of the bath such absorption is minimized.

The non-reliability of drugs has forced us to give more attention to the hydriatic management of cardiac cases. It will be admitted that the main reliance has been digitalis, but its toxicity and the long list of its contraindications considerably reduce its usefulness.

Digitalis slows the pulse by impeding the conduction of impulses through the atrioventricular bundle of His. The Saratoga effervescent bath slows the heart action and increases pulse volume without impeding any function; the effect upon the heart and vasomotor system is a natural one.

The Commission systematically discourages the use of the effervescent bath by cardiopaths without medical advice.

General Equipment

The State Bath Houses are equipped for the administration of all types of hydrotherapeutic treatment. Brine, sitz, Turkish and Russian baths are available.. The various douches, packs and fomentations are applied as ordered. Colonic irrigations (Plombières), salt rubs, oil rubs and alcohol rubs are given. General and special massage and resistance movements are practised as the physician directs. Neurovascular training and eliminating and reduction treatments are carried out as ordered. There are indoor and outdoor swimming pools of the most attractive character.

The dry climate of the Saratoga plateau, at the foot of the Adirondacks, is particularly salubrious. The elevation of the plateau is about four hundred feet.

The new Washington bath house, in complete operation for the first time in 1920, is a beautiful structure of concrete and stucco, and is designed as a permanent feature in the ultimate development of the Reservation. The building is in the shape of a wide letter "H" with the main entrance lobby and offices in the center and the dressing room sections each side of them. The bath rooms are in each rear wing and the rest rooms in each front wing. Entering the lobby, the visitor sees on either side the office of the bath house superintendent and the physician's consulting rooms. Separated from him by rows of massive pillars are waiting rooms for men and for women. From these waiting rooms lead the corridors to the dressing rooms, which are finished entirely in white enamel, including woodwork, furniture and equipment. The floors of this section are a light gray concrete with green linoleum runners.

After the patient leaves his individual dressing room, he is conducted to the bath rooms, which have also been finished in pure white—even to the concrete floor. The bath tubs are all white porcelain, with nickel plated fixtures, and are built into the walls of the bath room. It is necessary to use pure porcelain tubs because this is one of the few materials which successfully withstands the corrosive action of the carbonated mineral water. All around the bath room wings the concrete floor is carried up to a height of about eighteen inches at the sides. This, with the built-in type of tub, does away with any possibility of water or dampness collecting anywhere in the building.

In the rear of the bath room wings are several complete suites, including dressing room, bath room and rest room. Here the patient, by the payment of a slight additional charge, can do away with the necessity of passing through the corridors from the dressing room to the bath room sections and back to the rest rooms.

The general rest rooms are located in the front wings, on each side of the building, and are divided into alcoves, containing two or three couches each, thus securing a considerable amount of privacy and allowing complete relaxation for the patient. In the front of each rest room section is a solarium, furnished with rugs, wicker tables, easy chairs and rockers, for those who prefer the easy chair to the couch for their rest period. The color tones throughout the whole rest room section are green and white, a combination very restful to the eye.

The outside of the building is finished in white stucco with dark brown half-timber work. Pergolas finished in dark brown wood, with massive white concrete pillars, and columns supporting the semicircular porches on either wing, lend a pleasing touch to the otherwise severely straight lines of the building.

The piping systems for mineral water, plain water, steam supply and waste water, the sanitary sewage lines, and all electric current mains, are completely accessible for examination and repair in a roomy electric-lighted subway, extending the whole length of the building. This feature removes from the main floor of the bath house any possible noise or heat from these lines and also makes them quickly accessible to the engineer in charge, without passing through any part of the bath house proper. Throughout the building and its equipment modern methods have been followed and the very best materials obtainable have been used.

For the preparation of the mineral water baths, a new equipment has been designed, which makes possible the delivery of water to the tub with the highest degree of supersaturation with carbon dioxide gas of any bath house in the world. At the same time the temperature is easily and quickly regulated. The control of the physician over the amount of supersaturation and temperature is thus absolute.

The mineralized and carbonated water is piped direct from the springs far underground, without decrease of natural pressure, to large storage tanks, the purpose of the tanks being to store up the flow of the springs during that portion of the twenty-four hours when the water is not needed, in order that it may be available during the busier periods. Inasmuch as it is entirely excluded from the air, and pressure is maintained, it loses nothing of its mineral or gas content.

When the patient is ready for the bath, the water is drawn into the tub under its full pressure, and thus enters the tub in exactly the same condition in which it issues from the ground. Each tub is provided with a hose connected to a steam pipe which carries live superheated steam from the heating plant located in a separate building. The end of the hose terminates in a bath heater, designed especially for this purpose. The live steam heats a succession of aluminum flanges, which in turn radiate the heat into the water, without agitation of the latter, in much the same manner that an air-cooled engine radiates its heat through flanges.

A test of the bath for CO_2 is then made by an attendant. If less than the full supersaturation of 40 per cent is required, the excess is dispelled by agitation. When temperature and gas content agree with the physician's prescription, the patient enters the bath.

Concluding Remarks

At the present time, it may fairly be stated that there is no therapeutic agent whose use rests upon a more thoroughly rational and scientific basis than water. During the last twenty-five years its employment in accordance with sound principles based upon accurate data has led to its recognition as one of the most potent of remedial agents.

Water, applied externally or internally, and at such temperatures as may be required, is an agent which more fully than almost any other co-operates with the healing powers of the body in resisting the onset and development of pathogenic processes. It is prescribed today with the same precision as in drug therapy. It may be employed to meet and nullify, in a peculiarly adequate

way, many of the disorders incidental to our highly geared civilization. The simplest of all elements, it has come to be recognized as one of the most powerful means of influencing the varied functions of the animal body. When one reflects that the cutaneous area is capable of containing almost two-thirds of the total blood volume, and that this capacity can be therapeutically utilized and discreetly controlled, one is almost tempted to challenge the comparative potency, safety, and flexibility as regards control, of drugs employed for analogous purposes. Certainly it is no cause for wonder that our clinicians are coming to rely more and more upon hydriatric measures in a rationally limited group of diseases.

The unanimity among scientific practitioners regarding the efficacy of modern mineral hydriatry has made it comparatively easy for the State Conservation Commission to establish a *rapprochement* with the profession. The future usefulness of Saratoga Springs to the citizenry of the country is assured by reason of *entente cordiale* which has been effected.

"It is clearly evident," says Commissioner Pratt, "that right utilization of the medicinal springs at Saratoga can be brought about only through coordination of the State's administrative control with the practice of the medical profession. It is in the highest degree important that the Conservation Commission, in its conduct of the great natural resources found at Saratoga in such lavish abundance, shall appreciate fully not only the material, physical requirements for taking the cures that these waters offer, but also the ethical obligations in the medical sense. With the development of the medicinal springs, whether their waters are used for baths or for drinking, there is imposed upon the Commission an obligation which physicians understand as the obligation of medical ethics. This obligation the Commission will endeavor to appreciate and adhere to. Saratoga holds no cure-all.

"The springs need no exploitation. The medical profession at large understands the firm resolve of the Commission to work steadily and consistently, and above all ethically, for the higher development of this wonderful health resort. The springs must be made increasingly available to the public in their pure and unchanged natural condition. If any individual physician wishes to prescribe them in altered form for an individual patient, this will be entirely upon his own responsibility and will affect no other than his own individual patient.

"To endeavor to identify the Saratoga waters as to their chemical make-up with the waters of other springs is to endeavor to make them shine by reflected light. The Conservation Commission is determined that Saratoga's position shall be taken by Saratoga itself, because of the merits that it possesses, and not because of artificial or transplanted merits or reputation. In this endeavor the Commission asks the co-operation of the medical profession."

A new science and an old art are met at Saratoga in this time of belief in the value of physical agencies in medical treatment. To the seekers after health sent to us by their physicians we can say, in the language of the old Roman inscription on the baths of Caracalla:

"Light of heart approach the shrine of health,
So shalt thou leave with body freed from pain."*

*"*Curae vacuus hunc aditus locum*
Ut morborum vacuus abire queas."

115 Johnson St.

MARSHALL AND THE CONSTITUTION.

LOUIS O. VAN DORN, ESQ.,
Of the New York Bar.
New York.

From the name of this Society and the titles of previous addresses it has heard, it would seem to me that to qualify one to read a paper at your meeting, he should be accomplished in two great professions—medicine and law. I lay claim to no such double learning, which fact caused me decidedly to hesitate when your president invited me to address the May meeting of this Society. I frankly told him that I knew nothing out side of the law, and very little of that, and that if I presented any topic it would have to be one dealing entirely with the profession, with which during the last thirty-five years I have made some acquaintance. To this he agreed, kindly adding that the members would be interested even in a purely legal topic. Perhaps this is so. Having been president several years of a Bar Association where we had speakers at occasional meetings, I recalled that the members seemed to be perfectly willing to listen to an address on a topic which was not essenitally and wholly law; so it seemed to me that even a society partially made up of physicians, might become interested in a short review which dealt with something entirely outside of the medical profession, because I remembered that we lawyers would have given close and earnest attention to an address from a physician or surgeon on some memorable landmark in the development of the great profession of medicine.

It is in that view that I agreed to take the chance of interesting this meeting in a brief review of what might, superficially, be termed "ancient history,' in recalling John Marshall and the Constitution; but which is, in fact, as vital a subject today as it was a hunderd years ago. For the principles involved are as essential to us as the atmosphere we breathe and the preservation and proper application of these principles require the unceasing care of every generation if true and workable popular government in America is to endure.

The Constitution of the United States was the finished product of a race of freemen. It was not an isolated phenomenon. Perhaps no division of mankind, other than the English-speaking men who assembled in the Constitutional Convention that produced this great instrument, could have evolved so perfect and enduring a scheme of free government as is found in the few clauses of our great Constitution. The political experiences that were embodied in it were the mushroom growth of a year or a few years. The Constitution was not born because of the chaos which accompanied the Articles of Confederation; neither can it be said that the Revolution was the genesis of the Constitution—but rather eight hundred years of a gradually developing freedom, starting far back in the origin of English history; the fight against the powers of the crown; the gradual growth, the slow accomplishment of equality before the law; the final predominance of Parliament. All these essential developments through hundreds of years were required to complete the mental and political equipment of those men who produced the final plan of a balanced, free and democratic government in the wonderful instrument which we term our Constitution.

The Constitution was drawn with the purpose of creating a free and democratic government, but with the knowledge on the part of the Convention that mob

*Read before the Society of Medical Jurisprudence, New York, May 10, 1920.

rule was impossible. The Constitutional Convention had the moderation that is inherent in the Anglo-Saxon mind. The problem was to create a government that would govern but not oppress; a government which was lasting, but not inelastic; a government which bore as little as possible on the individual, but did bear on all; whose general protective powers might be gradually extended; a government which was a democracy, but which could not be thrown from its foundations by sudden gusts of popular passion; a government which would protect his property as a prime essential of civilization, and at the same time would preserve the individual liberty and happiness of the man.

Its adoption was the occasion of perhaps the greatest political contest that was ever fought out by English-speaking people. Time after time, its adoption, burdened with the weight of the entire future and fortunes of the American people, trembled in the balance. It may be said that only the personal influence of Washington, then a private citizen managing his estate at Mount Vernon, brought about, at the climax of the fight, the vote of ratification by the Virginia Assembly by the narrow vote of eighty-eight in favor against eighty opposed. It must be said that upon those eight votes of the men of Virginia, on the 25th day of June, 1788, hung the entire fate of the United States of America. Virginia by this narrow margin ratified the work of the Constitutional Convention and the Constitution of the United States became an accomplished fact.

This great instrument was ratified September 13th, 1788, and the long struggle on the field of battle, in the assembly halls, in legislative meetings, in constitutional conventions, in public assemblages, which commenced with the revolt against the Stamp Acts in 1765, and which lasted for twenty-four years without a moment's cessation, culminated in the ratification of a document containing an almost perfect scheme for the government of a free people, *depending upon its construction and application.*

But it was not self-executory. It possessed no national treasury; it commanded no armies and navies; it was silent and incapable of application and enforcement by itself alone. The work of drawing it was one thing; the labor of adopting it was another; but the real task was its construction and application to a living and lasting government, and at this point in the history of the United States we stood at the parting of the ways—a way on the one hand that led to rapid disorganization, discredit, nullification and destruction of the Union; and a path on the other hand, that led to that future of union, strength, prosperity and power which, fortunately, we have secured, and which today we enjoy, largely without being conscious of the enormous benefits we possess. Someone at the fork of the roads chose between the right hand and the left. That man was John Marshall, appointed Chief Justice of the Supreme Court of the United States, January 20th, 1801, by John Adams, as one of the last acts of his term, and who sat as Chief Justice of the Supreme Court for quite thirty-four years thereafter.

John Marshall was a Virginian of good and plain American stock—strong through labor and study; a soldier with Washington during the entire eight years of the Revolution—a close friend of Washington's. He was imbued with the elevated patriotism and unselfish devotion of Washington. He had the instinct in him, and it developed in the light of his association with the best and greatest man our race ever produced. Marshall was not a mere student or doctrinaire. He did not avoid service in the revolutionary army as his great antagonist did, but served through the war. He was at Valley Forge. He maintained his principles with his life. He suffered and endured with his great chief. He saw the wretched effects of mere langauge—mere declamation. He knew the value of acts, he knew the importance of union and knew that freemen to maintain their freedom must submit to the discipline of law and order. So that it is said of him in his court decisions construing the newborn Constitution, he saw the problems in the light which flashed from the sword.

There were a thousand views of how the Constitution should be applied. A thousand men expressed different theories of what sort of government it has created. There were mainly two schools, the Republican, led by Thomas Jefferson, the Governor of Virginia during the Revolutionary War, but not in arms, of whom Washington uttered the pathetic inquiry at Valley Forge—"Where is Jefferson?" The other was the Federalist school of which Washington, Adams, Alexander Hamilton and John Marshall were the great and, fortunately, the successful leaders. With the one the political theory was to make the States supreme, to permit the National Government to exist only so far as the States were willing that it should exist, and so far as there was a Congress or National Assembly, to make it the predominant factor in the national government, and to have a national government, so far as there was one at all, by Resolution of Congress. The Federalist school said that was not the kind of government that had ever lasted or ever would last; that the necessity for a strong union was clearly apparent; that where the Constitution spoke the States must obey.

I do not hesitate to say that the theories and the doctrines of the school of Jefferson and his followers, if they had been put into force and effect by a complacent Supreme Court of the United States, would have led to a prompt breakup of the United States of America, the interval before that catastrophe serving only as another illustration of the impossibility of holding powerful and conflicting States together by preambles and resolutions.

The hour was at hand and the man was there to decide our destiny. But consider for a moment the stupendous nature of the task which occupied thirty-four years of the ripened intellect and iron courage of John Marshall. Almost from the hour of his elevation to the Bench as Chief Justice, the Federalist party fell into decay. Jefferson and his followers were supreme. John Marshall was left in a place of lonely power, standing like a rock against the forces which would disintegrate the new republic, and he was compelled to gather to him the support of the people of the country; to withstand the plots and machinations of a hostile political party; to explain doctrines and enforce them, which ran counter to that party's political faith; to fight and to avoid impeachment; to make the Constitution live and to save the Union.

He could not have done this if he had not been right. Therefore, Marshall had to make his decisions, a few of which we shall speak of presently, unassailable in logic, of such plain common sense as could be understood by all of the people of the country, sound in right and justice, permanent in effect and result, and of such a character, form and nature as we would appeal to the good sense of all the people and draw to his support the profound and basic spirit of loyalty which, fortunately, pervaded the hearts of most Americans to their Government, even in the dark, anxious and confused days when it was a mere experiment in freedom and ordered democracy.

To this task came one of the greatest men ever produced on this side of the Atlantic; one of a long line of English-speaking men who have been the successful champions in the splendid development of human liberty with law; a man entitled to stand with Hampden, Charles James Fox, Chatham, Washington, Hamilton, Lincoln and Roosevelt, a true protagonist of Anglo-Saxon freedom—John Marshall, of Virgina.

It is no mere accident that in the great crises of our race we have always found a champion. Like the Constitution itself, it springs from the capacity to stand firm, from a sense of fairness, from long habit of self-discipline, from a knowledge that the people must control themselves, just as the individual must control himself. That such men appear is because for a thousand years the English-speaking people have understood these things and have practiced them; because they have found that from these things flow permanent happiness, justice and opportunity; because there is no pessimism in our blood, no sense of failure, but a brave confidence that if we are right we cannot fail. John Marshall was one of those men—great leaders of a free people. He was like the others in essential characteristics. He was a man of simple tastes, of pleasant disposition, who loved to associate with his cronies; he was fond of pitching quoits, and wore old clothes in preference to new; he was profoundly humorous. He was a plain man and used to go to market at Richmond, Virgina, with his market basket on his arm.

Two anecdotes of Marshall illustrate his humorous outlook—that valuable faculty of not taking oneself too seriously, even though the fate of a nation depends upon one's efforts. As he was browsing around the Richmond market one morning, dressed in the plainest sort of garments, a new arrival in Richmond, a gentlemen of some wealth, who was entirely unacquainted with the city and its people, having purchased a chicken and not desiring to carry it home himself, saw Marshall and said to him, "Here, my good man, I will give you two shillings if you will carry this chicken to my residence." Marshall knew and was known to every man, woman and child in Richmond, and out of pure amusement, seeing the stranger did not know him, he accepted the employment, and the citizens of Richmond rocked with laughter at the sight of a pompous citizen wending his way to his residence, meekly followed by the Chief Justice of the Supreme Court of the United States carrying a chicken by its legs.

Another anecdote is of an aspirant for judicial honors calling on the Chief Justice to engage his support. Seeking to ingratiate himself with Marshall, he said, "Mr. Chief Justice, you have now reached the pinnacle of judicial eminence." "Yes," said Marshall, "I suppose I have, because I have acquired the capacity to look a lawyer straight in the eye for two hours and not hear a damned word he says."

It is not my purpose, for I do not think there is sufficient time, to dwell upon the terrible anxieties and dangers which surrounded Marshall and his fellow Justices following the administration of John Adams. It is sufficient to say that the followers of Jefferson endeavored to stir up the entire country against him. Hostile leaders in the Congress and in the Senate were incited to impeach him. An impeachment trial was actually brought against one of his associates, Mr. Justice Chase, in March, 1805. Marshall was a witness on this trial in the Senate Chamber, and it is said that this soldier, statesman and judicial prophet showed fear when on the stand in that trial. Well he might, for he beheld, as on the brink of a precipice, the whole labor of Washington, the whole effort of the Constitutional Convention, the destruction of the Union and the ruin of his countrymen. The impeachment of Chase failed by a vote of sixteen to eighteen. The attempt was never again essayed. Marshall's logic, wisdom, moderation and prophetic vision became finally recognized, even by his political antagonists. The people came to understand that he was laying deep and broad the foundations for an enduring nation in the decisions of his court, written by the Chief Justice himself. During the period of these great decisions, Marshall dominated the court. Men of the highest rank sat with him, but he absorbed their brilliance, and Marshall was the Court and the Court was Marshall. There is only time for a brief reference to some of his decisions, and for the endeavor to point out in what respect they were essential to the Republic as it is today, as it has developed into the greatest power in the world, as it has been shown to be efficient in peace and war.

The cases I select are as follows:

Marbury v. Madison, in the term 1803, *reported in Volume I, Cranch's Reports of the Supreme Court of the United States, page* 137. In this case Judge Marshall held that an Act of Congress repugnant to the Constitution cannot become a law of the land.

The decision did no less than reduce the executive and legislative power of the national government to subjection to the supreme law, the Constitution ordained by the people. It made all public servants, however exalted, render obedience to the basic law established by the people.

McCulloch v. Maryland, decided in 1819 *and reported in 4 Wheaton's Surpreme Court Reports, page* 316. This decision held that the State of Maryland could not tax United States Bank or its branches. It held, "The States have no power by taxation or otherwise, to alter, impede, burden or in any manner control the operations of the constitutional laws enacted by Congress carrying into effect the powers vested in the national government."

At one stroke it made the national government supreme within its constitutional functions. Of Marshall's decision in this case it is said by Lewis, in Vol. II, page 363, of "Great American Lawyers": "Marshall's opinion in McCulloch v. Maryland is, perhaps, the most celebrated judicial utterance in the annals of the English-speaking world."

Gibbons v. Ogden, decided in the term 1824 *and reported in 9 Wheaton's United States Reports, page* 1: In this case Marshall held that the constitutional power of Congress to regulate commerce was supreme. It prevented for all time the erection by one State of commercial barriers against another State. It may be said to have opened the gates to the great, free flow of commerce between the States, to have prevented finally any one State from assuming control over or interfering with inter-state commerce.

Worcester v. Georgia, decided in 1832, *reported in* 6 *Peters, United States Supreme Court Reports, page* 515. In this decison Marshall again upheld the supremacy of the National Government over State laws and against State interference. It is said that the State of Georgia repudiated the decision and refused to obey it. But the principal was authoritatively announced and afterward the attempt of the Southern States to nullify the Constitution came up for decision upon the field of arms, and they were compelled to yield to force what they had not yielded to reason.

The greatest of these, and perhaps the weightest decision ever announced by a court, was rendered in the

case of Marbury v. Madison, reported in Volume I, Cranch's U. S. Supreme Court Reports, page 137. In this case Marshall decided that an Act of Congress was necessarily subject to review by the Supreme Court of the United States, to ascertain whether it was constitutional, and that the Supreme Court had the right to decide whether an Act of Congress was constitutional, and if it found it to be unconstitutional, had the right to declare it null and void. We have grown accustomed to this rule. The highest court of every State has followed it in respect to the Constitution of the States. It has become acceped as right and necessary—if an orderly government conforming to a written Constitution, preserving law and order, shall endure.

And yet it is impossible within the length of a discussion of this character, adequately to describe the political furor which Marshall's decisions aroused among the people and the politicians of the new Republic. Even today there are echoes of that storm. Within the last year a solitary statesman from the Southwest, having, by chance, no doubt, discovered ancient traces of the hurricane, has sought to revive the attack on the Court, because of this successfully asserted power. But today his assault upon it was about as successful as an attempt to sink a dreadnaught with a putty blowpipe.

If we are to have a government permanently adhering to a written Constitution designed to maintain a certain form of government, intended to preserve inviolate the essential rights of the States, drawn to maintain forever personal rights of liberty and freedom, it was and is essential, and today every man acknowledges it to be inevitable, that there must repose somewhere the power and the right to invalidate acts of assembles, legislatures and congress, which would nullify and destroy that form of our government, those reserved powers of the States and those inalienable rights and privileges of the individual citizen. If this were not so, then the Constitution woud be a mockery, fundamental rights would not be fundamental, a permanent union would not be permanent; because if legislatures and congress could pass any law without regard to whether it was constitutional or not, the Constitution would be open to change with every session of the House of Representatives. What was constitional last year would not be constitutional this year, and the constitutional rights secured by the instrument and preserved for one hundred years could be destroyed by an Act of Congress in the span of a week. The mere majority of a popular assembly could, at any meeting, order a change in or wipe out, every constitutional guarantee.

There are plenty of doctrinairies today, theorists, who prate about popular government, whose ideals seems to be the rule of the mob, the giving effect to the crushing weight of the majority of today, although it may be the minority of tomorrow; but fortunately for our country, John Marshall evolved and announced from the Bench of the Supreme Court of the United States a rule of law that every Act of Congress must conform to the Constitution, and that the Constitution itself could only be amended in the manner stipulated in the great contract.

That one decision established the United States of America as a sovereign, working, permanent power. Had he been a weak man, had he been a theorist, had he not borne the bitter suffering of the Revolution, had he not been in the forefront of the long fight for the Constitution, and had he decided the other way, the Union of the United States of America would have dissolved into warring factions, as has dissolved every other league of sovereign states heretofore existing in the worlds' history.

These decisions made the Constitution of the United States a living power. They vitalized it for all time, and not until the people of this Republic become tired of a great and free democracy, not until they deliberately set out to destroy their own government, can any successful assault be launched against our constitutional rights, and we owe this to the wisdom and resolution of the greatest jurist who ever sprang from the loins of the Anglo-Saxon race. He established the rule of law as against the rule of force. He made it a government of law and not a government of men; he made us America, and not Mexico.

It is through these achievements that Marshall's name stands with the stars of the first magnitude.

It is not often the fortune of members of the great professions of medicine and the law to be remembered by the mass of mankind. Only some tremendous outstanding achievement brings immortal fame to the physician or the lawyer. However, the name of John Marshall is written in such bold letters on the scroll of fame, that it is still clearly legible to us all. There it will continue to shine, because it is not too much to say that the country which Washington created was, by John Marshall, as Chief Justice of the Supreme Court of the United States, in large measure preserved.

Discussion.

Judge Alfred E. Ommen: We can felicitate ourselves on this very splendid address. While it is true that it is not on a medical jurisprudence subject it is certainly most timely. I am very much interested in two things Mr. Van Doren said, one was about John Marshall coming from Virginia, because it recalled to me a story.

A father said to his son who was about to start for the West: "My son, when you meet a man never ask him if he is from Virginia, because if he is from Virginia he will tell it to you, and if he is from some other State, why humiliate him by forcing him to acknowledge that he is not from Virginia?"

The other proposition which occurred to me is that the men who made this country great were the men who were rugged and strong, perhaps rough and uncouth in their dress and appearance, but they were clear-headed, very simple in their decisions and very direct in their language. Take just a few of them; take Marshall and read his opinions. They are in plain and simple language; one can easily read them, and clearly understand them. Take another man of the Civil War whom everyone understood. He talked simply and plainly. That remarkable man was Lincoln. And Roosevelt had that manner of plain speaking. If there were any thoughts to be conveyed, any decisions to be made, any opinions to be given, they were in the plain language of the people. I know of no man who has made a great impression who was a master of smooth phrases or an eloquent speaker. There were Everett and Seward, finished speakers, but somehow they did not make an impression on the people of the country. So in this time it seems to me, what the country needs is a new bath, some one with plain ideas who will speak plainly, definitely and clearly, in the language of Marshal and Lincoln; some one who will teach the people of this country in the plain language of the speaker of the evening; some one who will show them that we are a great republic with a fundamental law of the land embodied in a Constitution which is ready for any and every emergency, and which offers every opportunity, a Constitution which offers an equal chance for every one whether he comes from Russia or from China, or wherever he comes from. The opportunity is here for a man to move on and to grow and develop and to become rich and powerful and active. The great doctrine we hold is the doctrine of the importance of the individual.

Just now we hear so much of the masses and the people and society. But it is the individual, the great man who stands out and beats the way; the others follow the great man. The great man stands out in his might, unafraid and alone, as Marshall did who gave life to the Constitution and made it the basis and bulwark of American liberty, and nobody else did this. What would have happened if the mass had attempted to make the Constitution? We would have nothing but chaos. What would have happened if Lincoln had not shown that a house divided against itself cannot stand? He made this so simple that everyone could understand and realize what it

meant. It is now time for some great American to stand out triumphant and lead us in clear thought and plain language. There never was a time when such a man was needed more than today.

Every man who has a boy wishes him to have a better chance than he has had, no matter how ignorant he is or where he comes from, and he feels that in this country his boy has an opportunity to grow and become greater than he has been, and that opportunity should be preserved. So long as the individual has this opportunity this nation is secure under the Constitution.

Charles P. Blaney, Esq.: At the present time I feel that such an address as this ought to be given to the people, to medical societies, to lawyers and to the public. No paper could have been presented to us on a medical jurisprudence subject that would have been better than this. The very fact that we are in a state of unrest in reference to the very things that Marshall stood up for makes it appropriate that we should have had such a paper. States today are trying to overthrow the things Marshall stood up for. As Mr. Van Doren said, Marshall was born and brought up with the spirit and feeling that it was necessary to have law and to abide by it in order for any country to stand by itself. From the time he was old enough to consider anything his mind was on this subject, which finally became the law of the land and the foundation of this great country and under which the United States bloomed to what it now is.

It is seldom a man has the opportunity of forming a system of laws and then interpreting them himself. This opportunity Marshall had. He not only created the Constitution, but he afterwards was engaged in formulating the principles based on the Constitution which at the present time are of the greatest importance both in business and in the social structure. The decisions rendered by Marshall have been adopted and carried out by business people today. They are the foundations of business. They are applicable so far as the legal principles are concerned and to matters of legislation, as for instance in connection with the income tax. Last winter in the Legislature this was shown. Marshall decided that if a piece of property is exempted from taxation you cannot pass a law cancelling that exemption. In 1919 the State of New York passed an income tax law which would have taxed certain securities that had been exempted. They failed to recognize that if property or securities were once exempted from taxation, they could not pass a subsequent law to tax them. In 1810 Marshall said no State could tax property that had been exempted, and that decision is as vital to our welfare today as when he formulated it. The decision in the case of Marbury against Wilson is as important today as it was when Marshall gave it. These things show the greatness of the man and his ability to see what was coming in the future and what this country would need.

It seemed to me while listening to the words of the speaker of the evening concerning this great man, that we were greatly indebted to the great lawyer who promulgated principles which are immortal and that we should thank him for calling our attention to some of them.

William White Niles, Esq.: We do not always bear in mind the part Marshall had in the making of the Constitution which became the supreme law of the land. Mr. Van Doren has told us this comprehensively and briefly. He has put a great deal of material in a few words and it has been a pleasure to listen to this address. Mr. Niles moved a vote of thanks, which was enthusiastically carried.

SOME THERAPEUTIC USES OF ELECTRICAL CURRENTS WITH ILLUSTRATIVE CASES.*

WILLIAM MARTIN, M.D.,
PRESIDENT OF THE AMERICAN ELECTRO THERAPEUTIC ASSOCIATION,
Atlantic City, N. J.

The trend of the public in its choice of therapeutic measures seems to be toward those of the drugless nature. This applies particularly to chronic ailments, and is demonstrated by the continuously increasing numbers of osteopaths, chiropractors, neuropaths, and others, whose success must be more or less demonstrated, otherwise they could not survive. The medical profession has been slow in accepting physical measures in their therapeutic application as worthy of notice, and as they have not been taught in the colleges, those whose tendencies have been toward the use of these, have had many difficulties to surmount, and the result has been disastrous to the profession at large, and an incentive to some to pursue their use in the irregular way. This result has placed the use of physical measures more or less under the ban of the medical profession.

For many years treatments by galvanic and faradic currents have been recognized to have value in various nervous and other diseases, and these currents have had their place in therapeutics. Of more recent years other currents have come into use, but as they were not studied by the few who more or less controlled the professional thought, they have been placed under the ban of their disapproval, and all physicians using them to any great extent, had to suffer the consequences.

Modern electro-therapy has gradually won out in spite of this antagonism, and today has many advocates who stand in scientific equality with those who criticize their use. That some do make preposterous claims does not disqualify those who are conservative. If critcism could be constructive instead of destructive, the medical profession would grow more and more open-minded, and good would accrue to all concerned.

In considering the more modern currents, or rather the more modern use of an old current, we have preeminently that of the static machine. This appears to be the least known and appreciated by the general profession. The machine is such a large and cumbersome affair that it has been discarded by many on account of the room it took up, and again, its usefulness has been placed as depending entirely upon its psychic effects. Of course, this is the result of ignorance and empiricism. In reality, the static currents are of the greatest value therapeutically when scientifically used, but valueless when applied otherwise. As in many other things, here it is "the man back of the gun" that counts.

The static current is a mechanical one, with practically no electrolytic effect, and on account of its insignificant amperage it has no heat effects. This applies only to the glass circle type, and not the high speed kind, which has the possibility of generating considerable amperage. The current is a unipolar and unidirectional one, and the patient is usually treated from the positive side, with the negative grounded, and seated upon an insulated platform. The electrode is usually made of flexible metal, so that it can be moulded to the part to be treated. The form of current most used is called the wave current, owing to the wave-like effects produced by the discharge of current across the open spark gap. These discharges of current cause distinct contractions of the tissues under the electrode, and each contraction is folllowed by a release, so that a purely mechanical effect is produced. This has the effect of promoting expression of exudates from tissues, enhancing metabolistic processes, both by cell gymnastics and hyperemia, and encourage eliminations. This is shown by the increase of solids in the urine.

In the treatment of neuritis and kindred affections, it has no peer. In the writer's opinion, the static current is the only one that will actually cure this intractable condition. As in all inflammatory conditions, we have an exudate as the result, and this exudate naturally causes adhesions between the nerve and its sheath as well as in and around all contiguous tissues, which not only cause pain from pressure, but interfere with motion, and finally bring about loss of sensation and atrophy. In such conditions, the mechanical current is the logical one, which by its constant succession of contractions gradually releases these adhesions, thus restoring circulation and nerve function. The same effect is had in sprains, for the tissue infiltrate is thereby expressed

*Read by invitation before the Lehigh County, Pa., Medical Society.

and the usefulness restored. This is easily substantiated in the practice of all doing this kind of work, and is a common occurrence. It is no exception to the rule that an early case is much more easily cured than a long standing one. To illustrate the ease of cure in a mild and recent case of what may be called peri-neuritis, the following case may be cited:

H. H., age 33, merchant, came to the writer with the history of a severe pain in his left knee. The pain was always worse at night after being upon his feet all day. Sleep was fitful and at times impossible on account of his suffering. Prior to this he has had occasional attacks of lumbago, all of short duration. About a year and a half ago he had a sharp attack of pain in his right shoulder and arm, which lasted a couple of weeks. There was a history of a chronic appendicitis with a later appendectomy, also an abscess of the liver which had received surgical attention. His more recent health has been good, with the exception of the neuritic pains.

As in all such cases, the wave current was applied to the sciatic notch with the view of testing out the nerve responses, and the pain resultant was the evidence of being upon the right spot. This testing is practically the same as the treatment, the only difference is the length of application. With the patient sitting upon the insulated stand, the electrode placed over the notch, the machine is started with the poles together, and as these are slowly separated, the current jumping across the spark gap causing contractions as previously mentioned, also produces a most painful effect which is graduated according to the width of the spark gap. In the case under citation, this effect was quite severe at first, but as in all moderate cases, it soon lessened under the current, and as this effect was noted, the spark gap was widened to increase the current strength. The treatments were of a half hour duration each, and applied daily, and at the end of two weeks he was entirely well. This is evidenced by the fact of the disappearance of all symptoms and an absolute inability to cause pain by the use of the current. This is fortunately a type often seen and readily cured, and demonstrates a method of securing relief and cure that saves the stomach from the usual salicylates and other digestive disturbers.

Then again we frequently have cases that have been sufferers for years with repeated attacks of pain, with such adhesions that the parts are tied down effectually and the limb or parts made useless. These cases are much more intractable and it takes many weeks of active treatment to overcome them. Perseverance and care in the selection of the best means at hand, sometimes the use of other currents in addition to the static wave, will be necessary to secure the result desired. One must not use any one or more current empirically, if he expects to get the best results. There is even more need of knowledge and care in this than in the selection of drugs in the usual practice.

During recent years the high frequency current has come prominently into use. This has been taken up by a large number of the profession under instructions from the agents of the manufacturers, who have placed many types of good, indifferent, and poor apparatus upon the market, and have told the physicians of their wonders, and have persuaded some that they can cure about everything to which the human is heir. Of course, this is a gross exaggeration, so far as the curative value is concerned, but then again this does not invalidate the high frequency current. Empiricism should not prevent others from being scientific, and the high frequency current is most potent for good if used properly and wisely. Those untrained physicians who purchase one of these pieces of apparatus and use it under the instructions of the agent, use mainly the vacuum tube in giving treatments. They call this the "violet ray," and as such, its reputation has spread to all parts of the earth as almost a cure-all. The writer takes exception most energetically to this term violet ray in therapeutics, as it is not a correct term as usually used. The vacuum tube when it has a low vacuum, does give out a violet colored discharge, but only under such conditions. The usual color is a blue or bluish white, as the vacuum is usually high in the average tube. This treatment is of value where there is need of a local or surface hyperemia, and there are numerous conditions to which this will apply, but the writer wishes particularly to call attention to the fallacy that it is a cure-all.

There are three types of high frequency currents, the D'Arsonval, Tesla, and Oudin. The first mentioned is that of largest amperage and lowest potential, consequently has the power to produce the greatest amount of heat in the tissues. The Tesla is stepped up from the D'Arsonval by passing the latter through a second solenoid, thereby the voltage is raised at the expense of the amperage. The Oudin is produced with a solenoid connected with one end of either a D'Arsonval or Tesla solenoid, and operated with an electrode attached to the solenoid. It is a one pole current, the circuit being completed through the body of the patient, which acting as a capacity, stores and conducts the opposite polarity to the discharging electrode. (Snow.)

Heat being the result of the action of this current through the body suggests its therapy. Hyperemia is produced to a greater extent than by any other means, both in depth of penetration and amount of surface according to the current strength and size of electrodes. This effect is best produced by what is known as diathermy, by which the current is passed through a part of the body by the use of two metal electrodes placed opposite each other, and the current thrown directly through. The blood stream as well as the tissues are thus directly heated to any desired amount, promoting metabolistic changes and activating eliminations.

When the current is applied for the purpose of reducing blood pressure, the method is different. We then use what is termed autocondensation. For this the D'Arsonval current is preferable, and the patient lies upon a cushion on a couch, under which is a metal plate the width and length of the cushion, which is attached to one side of the apparatus. The patient holds a metal tube about twelve inches long which is attached to the other side of the apparatus. The current passes through the metal plate, cushion, patient, and into the apparatus through the metal tube, registering upon a milliampere meter, showing the amount of current that the patient is receiving. This is given from twelve to twenty minutes according to the needs of the case. The effect is upon the deep nerve centres, relaxing the constricted capillaries, which equalizes the circulation, relieving the circulatory stasis, and also promotes elimination through all channels. The cardiac load is released and the pressure falls from five to twenty or more mm. hg. This applies to the systolic more particularly, but the diastolic also drops proportionately, and the pulse slows up and softens in character, showing the value of the treatment. This is also shown by the feeling of betterment, which the patient frequently expresses. These treatments supplement the usual routine methods of diet, exercise, rest, and other measures that enhance the general health. When the treatments are carried on with regularity, the pressures gradually drop a little each day until a point is reached where the patient feels

at his best. This may be his compensatory level, and this may be sustained by less frequent treatments until the time comes when they can be entirely stopped, unless organic changes have gone to a point where this is impossible. Such cases make treatments a life job, but they may be at more or less frequent intervals, and not daily. In the cases of early toxemic hypertension, or what may be termed hypertonia vasorum, the results are very gratifying. In the old cardio-vascular renal cases with extensive organic changes, we cannot expect to do more than extend life and make it more comfortable. A case in point is the following:

F. B. C., age 59, at the time he came under the writer's care in 1912, had been for years a busy manufacturer and had taken little care of his health until he found that he was unable to carry on his business. Turning this over to his sons, he sought advice, and learned that he was in the advanced stage of a chronic interstitial nephritis. He had taken all kinds of treatments from drugs to osteopathy, and found that the latter had given him more benefit than anything, but this too had shown evidences of failing. At the time he applied for treatment, his pressures were 240 sys., 160 dias., pulse pressure, 80. The radial artery was hard and 78 per minute. Aside from a left-sided hypertrophy, his heart was in good condition. There was considerable enteroptosis confirmed by the x-ray. Repeated urinalyses showed large amount of albumen and granular casts, as well as indican. His digestion being very poor, he had been living largely upon buttermilk, and had lost about thirty pounds in weight. He was given auto-condensation for the pressure, diathermy of the kidneys, and vibration of the interspaces of the second, third and fourth dorsal vertebrae, with the view of impressing the deep spinal centres which govern the circulation. As the pressure lowered, the static wave current was applied over the liver area in addition, to stimulate the elimination of the toxines. Castor oil was given after the first treatment and weekly afterward, to insure a fairly clean intestinal tract.

When his systolic pressure fell below 200 mm. hg, his head began to feel clearer, and there was a lessening of his dyspnoea upon exertion. The urine gradually cleared until finally it showed no albumen and only an occasional cast. These later entirely disappeared. In the course of about five months his pressures were sys. 130, dias. 94, pulse pressure 36, and his pulse rate was about 70. He felt at his best when his pressures were this low, and used every care to keep himself there, continuing to be abstemious in diet, taking the proper rest, and using graduated exercise. Clinically, he was well, but no one knows just how well he was organically, even though the evidences were in favor of a great improvement. It was thought best to advise semi-annual inspection and examination, which has been carried out each year in succession. When we entered into the world war, he went back into his business and carried it on with his old vigor and has continued to do so, but he gives up a few weeks twice a year to take a course of treatments, which appear to hold him in condition. The urinalyses are made monthly at a laboratory and still show the improved conditions to be maintained.

Another current very much used is the sinusoidal. This may be of either the galvanic or faradic type. The former has been more generally used, but of late years a wave generator of the faradic type has proven of great value. Both kinds are necessary in a modern up-to-date office. As the name signifies, this current is one whose waves or cycles are in the form of sine curves, rising gradually from the zero line to the summit and returning in the same way to an equal point below the line and back again, so on without a break or sudden stop. In this it is unlike the interrupted galvanic, which has the sudden break which jars the patient at each point of interruption. The sinusoidal to the contrary, causes wave-like contractions which are pleasant because of their smoothness. Their effect is a stimulation of the nerves and musculature. All muscles, voluntary and involuntary, are exercised, thus proving of value in cases of atony, intestinal stasis, paralyses and allied conditions.

It can be readily seen how valuable a current this can be in the various paralyses particularly, and numerous cases could be cited, were there time for it. Another type of trouble in which this current plays a very important part, is that of splanchnic relaxation, or what is sometimes known as splanchnic neurasthenia, which is usually most intractable. A case recently discharged restored, may be of interest:

W. G., a young lady, single, an accountant in an office of a large firm, with considerable responsibility upon her, went to pieces nervously during the early spring of the present year. When she applied for treatment, she was suffering from insomnia, dull headaches, mental torpor, loss of memory, which had been most excellent, physical weakness, constipation, and many other symptoms too numerous to mention.

Examination disclosed the usual sagging of the stomach and intestines, engorged liver, tender areas over the abdomen, fulness in the sigmoid particularly, much colonic flatulence, weak first sound of the heart, but no murmurs. The blood pressures were of the low type and irregular, one side being much different from the other, this difference being reversed when in the recumbent posture. The pulse rate was higher lying down than sitting, all of which is pathognomonic of this condition, and is due to a splanchnic relaxation or stasis of the venous circulation in that area. There is usually in these cases a predominance of nervous symptoms, and the tendency is toward despondency. In the case under discussion, there was more of a tendency to give up and not care what happened, but it had not progressed to the despondent point. The insomnia was most prominent in her mind, and she was dispairing of ever getting sleep enough to tide over each day.

In these cases the object is to re-adjust the circulatory balance by relieving the splanchnic stasis, toning up the spinal nerve centres, and improving the abdominal musculature. This is a pretty big contract, but it can be accomplished by the treatment to be outlined.

In the case under discussion the first measure used was diathermy of the liver to overcome the engorgement. This was given for twenty minutes, as explained previously. Following this was the sinusoidal. In her case the faradic type was used, because this particular apparatus had a better arrangement for giving deep and short wave contractions, which offered better stimulation of the spinal centres and the musculature. This was given twenty minutes also, and was followed by vibration of the interspaces of the seventh to tenth dorsal vertebrae for three minutes. Vibration has a very good effect upon the spinal centres, but must be given carefully and correctly, if good results are to be expected.

As the patient progressed toward a betterment there was a slight change made in the treatment. The static wave current was given at times over the liver instead of the sinusoidal current, and during the latter part of the time this was given altogether. The insomnia left within the first two weeks of treatment, and thereafter there was no further trouble. No drugs were given

for this purpose. The constipation was gradually relieved, but at first mild laxatives and enemas were ordered as needed. The patient remained almost two months under treatment, at the end of which she went home well enough to take up her work again.

Maryland and Pacific Aves.

A NEW TOURNIQUET ASSISTANT FOR INTRAVENOUS INFUSIONS.

DANIEL A. SINCLAIR, M.D.
New York.

The annoyances and difficulties encountered in giving intravenous infusions are mainly due to the lack of an assistant, whose chief function consists in the removal of the tourniquet at the proper moment, thus permitting the surgeon's attention, as well as his hands to be free in the performance of this delicate operation.

Text books in describing the technique of intravenous infusions speak of having the "assistant" release the tourniquet, etc., but the average surgeon cannot afford the luxury of an assistant, and after the needle has been introduced into the vein, is handicapped by the necessity of performing this important step in the procedure himself. The sudden release of the tourniquet may, by its rebound, displace the needle, or the motion of the surgeon's body, although controlled with great care and precision, occasionally results in jarring the needle out of the vein, thus necessitating replacement of the tourniquet, to his own annoyance and embarrassment, besides causing increasing nervousness and loss of confidence on the patient's part. Even the most skilfull surgeon will, at times, be compelled to replace the tourniquet after an unsuccessful attempt to give an infusion. In cases where an assistant is not procurable, or, for financial or other reasons, undesirable, the apparatus herein described, will fulfill all the necessary requirements, and consists of the following:

1. A pneumatic rubber bag, two-and-one-half inches wide by ten inches long, covered with a washable muslin jacket, the tail of which is one-and-one-half inches wide, and three-fourths of a yard in length. A rubber tube leading from one corner of the bag is attached to the single arm of a Y-shaped hard rubber coupler.

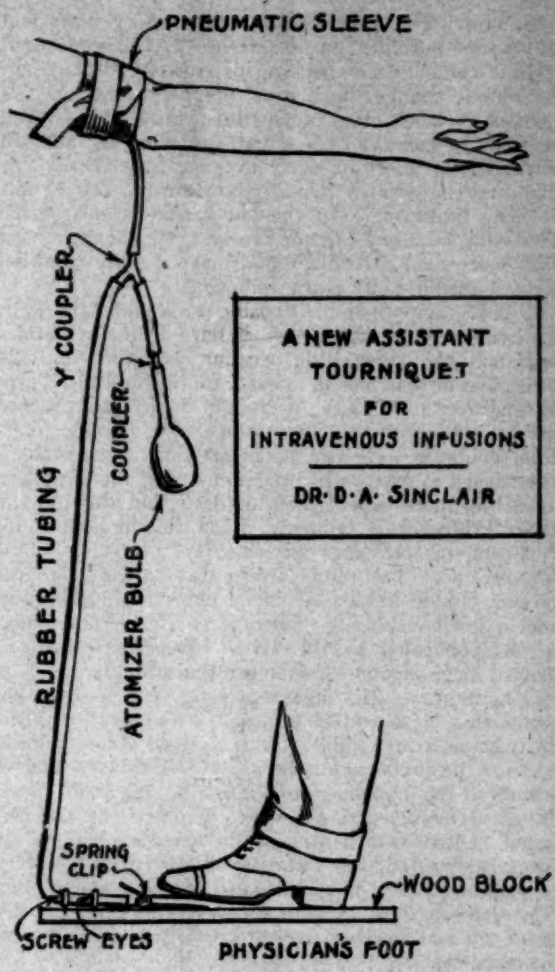
2. An atomizer bulb for distending the pneumatic bag with air.

3. A foot-spring, which is attached to a piece of plain board, three-and-one-half inches wide by ten inches long, and seven-eighths of an inch thick.

The rubber tube of the atomizer bulb is connected with one of the arms of the Y-shaped coupler; to the other arm is attached a rubber tube five feet in length and three-sixteenths in diameter, the distal end of which is fed through two screw eyes placed in front of the foot spring, thence into the jaws of the spring clip, which effectually compresses the walls together, and so retains them, until released by the foot of the surgeon. This tubing should be of the best gum variety, and easily compressible by the little spring clip.

DIRECTIONS.

The pneumatic bag, enclosed in its muslin envelope, is evenly placed around the arm in the same manner as though the blood pressure were about to be taken, and left in place until the completion of the operation; the air is then pumped into the pneumatic bag by the atomizer bulb to a degree that interferes only with the venous return, absence of the radial pulse indicating unnecessary constriction. The needle is now introduced into the vein, and when the surgeon is satisfied that this has been satisfactorily accomplished, and is ready to inject, the foot-spring is opened by gentle pressure of the operator's foot, the air allowed to slowly escape, and the injection given. If the needle becomes displaced after the infusion is begun, reconstriction of the venous return is readily brought about, without unduly attracting, if at all, the attention of the patient.



172 West 79th St.

IS THE USE OF MIXED VACCINES UNSCIENTIFIC THERAPY.

G. H. SHERMAN, M.D.,
Detroit, Mich.

Opponents to mixed vaccines, for some unknown reason, cannot adjust their mental make-up to a realization that mixed vaccines are not parallels to "mixed shot-gun prescriptions," or polypharmacy. A shot-gun prescription consists of combining incompatible drugs or in mixing a number of drugs that have no concerted action toward producting a definite effect. Nothing could be more unscientific than to use a mixture of incompatible drugs in treating disease; but such a conception cannot be applied to the use of mixed vaccines.

Bacterial vaccines are specific immunizers, and, where several kinds of germs are contained in a vaccine, they are specific immunizers for each variety of germs contained. So, if we have a streptococcus, pneumococcus

and staphylococcus in a vaccine, immunizing substances corresponding to the different kinds of pathogenic microorganisms has been abundantly demonstrated. Mixed infections are most common. To contend that mixed vaccines are not efficient immunizers, simply because they are mixed, would be equal to claiming that Nature has made no provision for taking care of mixed infections, a proposition too absurd to deserve consideration.

Let us take a case of streptococcus infection resulting from a slight skin abrasion. If not already present, staphylococcus infection is liable to take place. Would it be unscientific to give a vaccine which has a prophylactic value towards a probable staphylococcus infection, while at the same time it has a therapeutic value towrds the existing streptococcus infection? Prevention is more scientific than cure, and, in so for as mixed vaccines prevent the development of probable mixed infections while they are taking care of the existing infection, they are more scientific than single organism vaccines.

From this, we do not wish to infer that it would be advisable to include all the known pathogenic microorganisms in a vaccine any more than it would be supposed that infections are liable to be encountered in which all the infecting organisms are present; but, certain types of infections do take place, which are met with in every day practice, where mixed infections containing certain groups of organisms are the rule. Where single organism infections exist, mixed infections are liable to take place, and it is entirely scientific to treat these cases with a mixed vaccine containing the various organisms usually found in the particular type of cases under treatment. There are certain infections of the skin, mouth, nose, throat, mastoids, eyes, lungs, abdominal viscera and pelvic organs, that are markedly distinctive, in which the usual infecting organisms are known, and to give corresponding vaccines which will produce definite therapeutic and prophylactic immunizing results, is certainly not unscientific treatment in these cases.

3334 East Jefferson St.

The Man Young at Fifty

PERIODICITIES, CYCLES OF ENERGIZING, ORGANIC RYTHMS.

Their Significance and Regulation in the Mature Adult.

J. MADISON TAYLOR, A.B., M.D.,
PROFESSOR OF PHYSICAL THERAPEUTICS AND DIETETICS, MEDICAL DEPARTMENT, TEMPLE UNIVERSITY,
Philadelphia, Pa.

A topic of peculiar significance to those at or beyond maturity, is that of periodicities, cycles of energizing. These organic rythms at that epoch tend to fluctuate, become vulnerable, subject to variation and disturbance.

The mass action of some energy manifestations is through circular currents or tides grouped to sustain functions of shorter or longer ambit, from the heart beat seventy-five times the minute to gestation two-hundred and eighty days.

Only those functional cycles need occupy us now which are familiar and tend to become conspicuously disordered. The objective is to learn their relationships, under what conditions they tend to veer from the norm and especially how these commotions or retardations, disturbances or diseases may be foreseen and forefended. When they threaten or begin to appear they deserve calm recognition and prompt remediation.

The why of an energy cycle or periodicity is some form of organic need for pabulum, for distribution, an urge toward functional release, an instinctive demand for discharge through movement and the like.

It may be a need for oxygen, for gratification of an imperative something, an outlet of something suppressed, of a tension, or for a bracing up, all or any essential for the rounding out of life's processes. The objective of the art and science of conservation is a balancing of stimuli whereby changed forms of protoplasms are restored to the form previous to the action of the stimuli.

Cycles of energizing are of two kinds, the beneficent and the vicious, acting as regulators or giving evidence of disorder. They generate in the mind or the body or a combination of each, acting as self-perpetuating influences for good or for evil. The evil ones result from disorder in body or mind cycles, and some are self-suggested.

The more common disorders of functional rythm arise in the heart-blood vessel—renal cycle, the digestive and metabolic, the reproductive or sexual, the affective, emotional, "nervous" or judicial, the special sense organ cycle, and more or less in this sequence of frequency.

Vicious cycles, queer, obdurate or complex stresses have their origin more frequently in emotional or commotional or psychopathic or self-suggestive causes than in body cells (somatogenic) or in any other. Of course, it is safe to assume some physical (cellular) anomaly as a basis for the cerebral. Any loss in physical poise or disorder of rythm would, in all probability, have adjusted itself readily could the process have been freed from the emotional commotion. The cure is "to break the vicious cycle at its weakest link." Jamison B. Hurry.)

"Of the primary reactions the textbooks are full, but of the reciprocal influences of those reactions little is said yet. They are of immeasurable significance in the evolution, progress and termination of diseases."

We may for convenience and for remembrance visualize the cycles of energizing thus:

(1) Energy tides, a sense of power or of inadequacy.
(2) Reproductive cycles, ovarian, gastro-enteric, sexual, genito-urinary.
(3) Respiratory cycles including tissue respiration.
(4) Circulatory, heart, blood vessels, renal and lymph.
(5) Digestive and metabolic.
(6) Glandular, internal secretory (or endocrinogenic), or organic regulative cycles.
(7) Mental, moral, emotional, behavior, feeling tone cycles. Psychogenic, psycho-motor and ideo-motor tides.

Others there are but this should more than suffice for brief remarks.

All energy cycles are closely correlated, interwoven; one can only be understood or appreciated by inclusion of the others. These rythms of functioning are to be noted more graphically in many organisms of a lower type or organization. Boldyreff W; (*Quart. Jour. Physiology*, 1916, 10. 175) maintains that there are instances of such periodic alternations in the organism heretofore unappreciated. They express themselves in successive alternations of activity and rest. For example: "The current belief that glands and muscles which serve the

purposes of digestion and alimentation in general become quiescent as soon as the obvious work of the gastro-intestinal functions are completed, is erroneous." From what he says (quoted in *J. A. M. A.*, editorial, June 30, 1917), we may look for cycles in secretory apparatuses as shown by Cannon and Carlson in particular. Also in this connection, J. Dejerine and E. Gauckler (*Presse Medicale*, June 13, 1914), call attention to periodical asthenia which they ascribe to disturbed equilibrium in the ductless glands. They include a large group of conditions characterized by periodicity, of which cyclical mental disorders and periodical or intermittent asthenia are noteworthy.

"The term periodical asthenia is applied to cases of intermittent physical weakness, unaccompanied by impairment of intellect. These individuals suffer, in periods of a few days' duration, a marked incapacity for muscular work and abnormal fatigue with more or less sexual weakness. Attacks of asthenia, which appear and leave off suddenly, without apparent cause, are common in the menstrual periods, but occur as frequently in men and independently of these periods in women. They may appear early in life, and in a few cases seemed to the authors to be a sequel to infections such as typhoid fever or severe influenza. Some subjects have these asthenic attacks—lasting from a day or two to a week —three or four times yearly, while others experience them at fortnightly intervals. In the extreme type bodily movement becomes almost impossible. With asthenia may be various changes in the pulse or blood pressure, digestive disturbances, mild Basedow symptoms, or headache. In severe cases, duration of the asthenia averages two months. In a number no definite trend was noted, the alternation of asthenia and normal motor capacity continuing regularly without change. At times secondary neurasthenia arises through suggestion and auto-analysis."

In connection with states of feeling, Ladd and Woodworth (*Physiologic Psychol.* p. 529), mention poise as a blend of harmony and rythm, in sounds, cadences, an agreeable æsthetic feeling, a pleasantness. (a) Satisfaction of the æsthetic feelings; (b) dissatisfaction, the unsatisfied feelings, leaving a sense of unrest or longing, variations in intensity, excitement or depression, thrills or pains. (c) Despondency or revolt, disagreeable feelings.

As an illustration of irregularity in rythm they (Ladd and Woodworth) mention the effect on certain reflex responses, the knee jerk in particular. When attention is directed to this phenomenon it can be enhanced notably, *e. g.*, by voluntary clenching of the hands at moment of blow on the tendon struck, largely reinforcing the excursus.

So also of a noise, a sharp stimulus to the auditory reflexes. It is not so much the stimulus to the ear as the meaning to the individual, which exalts or depresses the spinal cord. Harmony in music gives direction to these states of feeling and the rythms which determine the rise and fall of feelings as they pass over the consciousness.

Periodicity, the Effect of External Conditions: Climate is of interest in this association. While it does not exert an effect, *per se*, it, like sounds (op sit) induces effects in proportion as the individual reacts to the stimulation or depression of temperature, atmosphere, and altitude conditions.

The much dreaded dangers of extremes of climate, especially tropical, have been largely brought under control, such as are controllable, *e. g.*, by clothing, periodic distribution of rest and work, and other personal adjustments. The contributory menaces of tropical countries are also met by precautionary measures through sanitary science and preventive medicine.

The largest contribution to these problems has been made by Ellsworth Huntington, directed to a more exact determination of climatic suitabilities (optima) for man, the relation of temperature to death rate, the amount of work done by piece workers in factories, and the strength of individuals as measured by the dynamometer.

"Obviously there are many interfering variables to set against the validity of statistics, local humidity, epidemics, seasons at which vacations are taken, etc. Despite this, however, the averages of optimum temperature on the basis of death rate is shown to be surprisingly little, the range being 62.7 and 65.8 F."

"When allowance is made for the effect of summer vacations in the American cities, it appears that the optimum is probably about 63 F. Since we are dealing with the mean temperature of day and night, such an optimum means that man is physically at his best when the temperature rises to about 70 F. at noon, but not when it stays all day at that level."

"There is not the slightest hint," he writes, "that either the white or the colored people by residing in the north or the south have become adjusted to a particular temperature. So far as these facts go, therefore, they suggest that man's adaptation to temperature is so deep seated, and of such remote origin, that it changes very slowly. Untold thousands of years of the contrasted environments of northwestern Europe and Central Africa appear to have produced a permanent racial difference of no more than five degrees, and possibly less, while the short time that the American people have been in their surroundings appear to have caused no differentiation."

This tends to confirm what the late Colonel Charles W. Woodruff contended so earnestly, in respect to the effects of light and heat on the white race in the Tropics.

Balance and Imbalance, in Feeling Tones, Cycles in the Affective Functions. With Hints on Regaining Poise.

Every one is subject to variations in powers of self-control; to ups and downs of energy, of impulse, of emotion, judgment, nutrition and of actuation. Elevations or lowerings occur in capacity, in feelings, of conscious or unconscious changes from day to day, often from hour to hour. Some exhibit large variations of energy only at long intervals. Occasionally these falls reach such a degree of gloom as to simulate grave mental abnormalities. Moods or aberrancies of feeling-tones occur and recur, or remain so obscured as to escape recognition. During explosions, tangential flights of force, or lapses from control, the character changes, the sense of proportion is lost, customary standards of conduct or of decision become obscured or fade away; instinctive defences, normal inhibitions evaporate.

Oscillations are peculiar to the realm of feeling, usually dependent on changes in the somatic (body) realm and modified by accidental factors—environment, dominating stimuli from without or within, fluctuating conditions of health, of energy, of weakness, of disease and of feelings of adequacy.

Determinants of conduct are moods, emotions, feeling-tones. They in turn influence beliefs and likewise somatic (body) states. The most forceful and prevalent modifier of decision in some form or degree is fear, anxiety, apprehension. Then are cells, tissues, secretions and, above all, centers affected unfavorably,

*In this section I quote from an earlier article.

oftentimes seriously; organic damage or destruction may result.

The powers of ideation, reasoning, choice, thus become limited; that of indirect, accidental influences, tremendous. Even faith must not be too blind or misleading. Bad habits of mind and body evolve chiefly from indecision, apprehension, fear; seldom from over-confidence or aggressiveness. Few of those who seek or need medical advice are free from some degree or form of anxiety neurosis. Only among the acute diseases can we feel confidant that this feature is absent; even here it may occur and modify vital processes.

The causes of emotional hypertension states are complex. A crude classification of instances commonly met may be: those due to (1) inherent over-sensitiveness to emotional influences, and (2) to faulty habit formation (anxieties) acquired along the whole range of training processes.

The factors include variations in feeling tones beyond normal or customary limits, in intensity, in range of periodicity, in slight disintegrations of mental phenomena, commotons in somatic processes, unusual reactions to stimuli, aberrant impressions from without or from within. Some element of apprehension is usually present, often coupled with heroic endurance. In eccentricities of belief the emotions are thrown just a little out of gear, inducing disarrangements in the motor sphere.

Attention is tension in nerve cells. Neurons which at any time furnish a physical basis for varying attention are subject to a thrilling vibration or quivering. There is also voluntary and involuntary, or reflex attention. Reflex attention is forced upon consciousness by external stimuli. These react upon visual, auditory, olfactory, or tactile centers and compel attention against the will.

Voluntary attention is correlated with heightened activity in cortical brain areas. Anxieties increase morbid hypersensitiveness and the whole makes for agitation, even turmoil, in the motor spheres. Tense voluntary attention, long continued, will weary the strongest body and brain. Protracted over-stimulation induces exhaustion in brain cells, till they shrink and become impaired. Muscular energy is so closely associated with the integrity of neuron cycles, that all influences affecting them become of extreme significance, whether bearing upon mental or physical competence. Psychogenic or emotional hypertension is a manifestation of habitually strained attention. There is present oftentimes more or less of physical stress, leading to perturbation in volition, to unhinging of capabilities.

It is well known that attention strongly, continuously and anxiously, directed to any organ will induce functional disturbance. Consciousness becomes dulled by repeated responses to, or irregularites in, stimulation, hence awareness falls below the threshold. There remains, however, the effect of perturbation; viz: arythmias persisting and manifested in the motor machinery. There is frequently exhibited a state which when revealed is psychogenic (emotive) hypertension. On the other hand hopeful attention concentrated, rightly directed and interpreted will go far toward repair.

Sensations incite to action and in terms of the original capacity, and the subsequent habituation, of motor paths and centers. Unless proper association fibers in the brain are developed by suitable nutrition, orderly adjustments, and right training, there must result both motor and sensory, and hence psychogenic limitations arising in the mind. Sensation tends always to pass into movement. If there be no image there will be no concept, and no concept can be formed without an accompanying motor outflow.

A reflex movement in neurons lies as the basis of every higher act of volition. The idea of an act tends to indicate movement. The consciousness may form a concept of the consequences of the act and check it. This second idea may suggest a modification of the act, or an opposite one. That which modifies the will is often anxiety. Fatigue may inhibit; nothing is so exhausting as long protracted and concentrated attenton. Doubt, indecision, is thus induced. Exhaustion follows.

To analyze the suppressed complex is the first step to solution. The next is to carefully trace out the primary steps of advance, to go over the ground from the beginning. After determining the status quo, the next step is to show how future advances can be made without committing former errors. This involves instruction in right habit formation.

Right habit formation is based on right guiding in motor impulses, and is essential to right thinking. New paths must be plowed out in motor soil, old paths revised; thus facility is acquired and enhanced. Nor should any habit be permitted to become too fixed. Capacity for variation is priceless; thus new and shorter routes can be traveled in the brain. When this capacity is gone, then is the organism a derelict indeed.

The desideratum is: balance between determination and execution. A large proportion of the benefits derivable from any kind of graded motor training depends for its chief efficacy upon transquilizing effects on mental turmoil. Exercise is almost universally conceived to be strenuous muscle working, which, valuable as it is, may readily exhaust and harm especially when not wisely directed.

The reparative potency of exercise is popularly viewed with extensive misconception; sometimes with over-enthusiasm, and often with ridiculous and reasonless condemnation. The aspect of reparative exercise here considered is its power to induce a negative condition or phase and, above all the habit, of tranquility, calmness, equipoise; to alleviate fatigability; to rehabilitate energy by encouraging the output of force just enough to accomplish self-control; to attain that position of advantage from which all latent forces may economically proceed to highest achievement consonant with inherent powers.

What, then, are the best measures for securing that motor equipoise so essential to mental serenity, hence for all-round efficiency?

Briefly, intelligent direction in forming habits of periodic complete relaxation, by alternations of definite, simple, primitive, motor energizing, with insistence on equally clear-cut periods of absolute rest, stilling the mind.

When the first steps of mind control are established, then one can proceed to more complicated, purposive acts, interspersed with intervals of repose. Ultimately, as progress in peacefulness warrants, there should be taught systematic habituation in the performance of motor acts making for amplification in vigor and effectiveness.

Mind Control: finally a brief sketch is offered of procedures to be followed in teaching mind control. The first desideratum is to induce quiet, a receptive attitude. For this a recumbent position is best, or that in an easy chair, the eyes closed, to dissociate the subject from all sources of external irritation, a withdrawal from the life of relationships. Next, full, candid explanation of the objects to be attained; the value of routine or ritual; the fact that responsibility rests wholly with the subject, the seeker for help, on himself alone. Outside help may and does contribute largely to success, but only by pointing

the way, affording the benefits of broader research, principles of action learned by composite and personal experiences; in short, only what any expert guide or director can supply of stimulus to volitional action. The subject must be made aware also of the immense, unused energies latent in every sane human being, vastly greater than are needed or ever rendered available, which can be drawn upon confidently and unendingly. The mines of force are inexhaustible; success is merely a question of getting out the materials and adapting them to actual use.

The routine may be somewhat as follows: after inducing passivity and receptivity, direct attention to one limb; that this can be moved, extended, flexed, at will, but now it is determined to encourage equilibrium, let the will abide in a negative attitude, neither push nor pull, rest at ease. Then direct the mind to pause an appreciable time, erase all impressions, recollections, determinations. Next direct attention to other limbs in turn and to the muscles of the neck, the back, the intestines, etc. Composure thus induced is oftentimes so great as almost to reach slumber. It is not sleep, but so pronounced and unaccustomed a calmness as to create the idea of somnolence. The effect is largely in the psychomotor domain; it is an exercise in tranquilization, in submission to one's enlightened voliton. It s "reason resumng her throne"; a becoming "captain of one's soul." From this serene point of vantage, this fount and origin of judicious action, one can then proceed to any sort or kind of purposive energizing. Direction may no longer be needed. In most instances, however, better results are ultimately reached by systematic graded increments in action, and complexities of movement, in carefully planned forms and kinds of exercise, until re-education in the more elaborate adjustments of daily life is attained. The motor element is paramount throughout. Biologically thought follows motion, however much action may seem to spring from thought.

Energy Tides, Rythms, Cycles of Depletion and Renewal.

In each normal individual energy tides rise and fall in accord with endowment. Some conform to the norm, others function well above the base line, are "human dynamos," others on a lower plane are "relative neurasthenics." This diurnal tide is generally at the maximum at about 10 A. M., declining more or less steadily till about 4 P. M., the first minimum, then rising till at about 9 or 10 P. M., when it reaches a second but lower maximum, thereafter subsiding till, at 3 or 4 A. M., the final minimum is reached. At this zero point it is that most deaths occur during exhausting illnesses. These diurnal ups and downs, whatever be their degree for that individual, recur with fair uniformity under usual conditions. They vary in accord with exigencies such as accidental influences, down during states of depression, anxiety, over-exertion, deprivation, exposure, and up after stimulation, hope, confidence, pleasurable excitement, especially combativeness, as Cannon has so well shown.

In addition to the regular or diurnal energy rythms there have been noted yet larger, longer cycles of energizing, at periods of weeks. Various explanations have been offered. The evidences point to periodicities analogous to the sexual or menstrual cycles. The causes are explainable through varied functioning of ductless glands.

Fluctuations also occur in accord with developmental epochs from youth to late age, the younger the more pronounced, till in middle age stability comes with maximum uniformity, thence declining with small variations till the final release. Conditions most favorable to the maintenance of top vigor and stability are: (a) states of mind or emotion, equipoise, serene confidence and, (b) special training, stable functioning, alternations of effort and of rest, in short, personal hygiene.

Also variants in energy content show in accord with such relatively unavoidable circumstances as accident, injury, disease, disorders due to infection or of body chemistry.

The highest human productivity—mental or physical —comes through seizing and making the most of favorable energy tides, helping the up curve, and equally opposing the downward trend.

Economies of energizing are to be measured in terms of artistic endeavor on the one hand and of gross or material accretions of power elements on the other. Distinctions here are worth while in view of the demands made upon the reservoir, whether rightly or wrongly. For example: in the field of initiation, of constructive imagination, it becomes necessary quickly to perceive and lend one's self to the push, the cosmic urge, the "elan vital" or "libido," as it becomes manifested. This should become both an easy and agreeable task.

The same influences obtain in the domain of labor, drudgery, the struggle for the means of existence, whether chosen or enforced.

The acme of energy accretion and utilization is displayed in the will to surpass one's self. This is art, the subordination of self, the striving to ge out of one's self the best that is in one. Whether one is conscious of such power does not matter. If one can become aware of a resolve it can be cultivated to almost any degree. There is a middle ground of endeavor and appetite to get more and more, to succeed to gain, and to appropriate the utmost, at any or all costs and with the least effort.

In determining just what measure or degree of effort shall be made in a given instance, harmony in expenditure, there enters the element of behavior or the feelings. The higher impulses become balanced against the lower urges. Here we also come to the element of primal instincts versus dominant inhibitions, artificialities, sophistications. Some are right, inevitable, and some are to be antagonized; over all judgment presides,

What keeps a man on his job? This is something of a mystery. Richard Cabot more nearly answers this query, in "What Men Live By," as a sense of duty to one's expectations of one's self, loyalty to one's ideals. Some achieve no higher a concept of duty than to meet material obligations to one's self and family, to amass a competence, to make a fortune up to, or beyond, reasonable needs.

Yet others cherish no higher ambition than to get the work, or job over and done with at the earliest moment, to welcome the "knock off" whistle, to escape the dull grind. Such individuals are sustained by no high purpose or motive. A notable part of the loyalty concept is the impulse to contribute to progress, also the sporting instinct ,"our shop versus yours," a contest in performance, a competitive spirit. Vanity is indeed worth something, "partizanship," *"gaudia certaminis."*

How shall energy renewals be cultivated? The motive or urge should run parallel with capacity, the resolve to live up to one's capabilities inherent or acquired. A high purpose should be modified by undue struggle against the urge of weariness, nature's warning that rest is

(Continued on page 216)

*The author has elaborated this subject in the *Medical Record*, May 8, 1920, in a paper including materials from earlier ones, entitled: "Poise or Tranquility a Necessary Condition of Economic Repair; the Negative or Resting Phase of Movement, as a Factor in Cure."

The Medical Times

A MONTHLY JOURNAL

OF

Medicine, Surgery, and the Collateral Sciences

ESTABLISHED IN 1872

EDITED BY

H. SHERIDAN BAKETEL, A.M., M.D., F.A.C.P.

ARTHUR C. JACOBSON, M.D.
Associate Editor.

Contributions.—EXCLUSIVE PUBLICATION: Articles are accepted for publication on condition that they are contributed solely to this publication.

When authors furnish drawings or photographs, the publishers will have half tones and line cuts made without expense to the writers.

SUBSCRIPTION RATES:
(STRICTLY IN ADVANCE)

UNITED STATES . . . . . $1.00 per year
(Including Alaska, Cuba, Mexico, Porto Rico, Hawaiian and Philippine Islands)

CANADA . . . . . $1.25 per year
FOREIGN COUNTRIES IN POSTAL UNION . . . . $1.50 per year

SINGLE COPIES, 15 CENTS

Definite written orders for THE MEDICAL TIMES are required from all subscribers, to whom the journal is thereafter regularly forwarded.

Notify publisher promptly of change of address or if paper is not received regularly.

Remittances for subscriptions will not be acknowledged, but dating on the wrapper will be changed on the first issue possible after receipt of same.

All communications should be addressed to and all checks made payable to the publishers.

MEDICAL TIMES CO.

ROMAINE PIERSON, *President and Treasurer*
H. SHERIDAN BAKETEL, *Secretary*

55 Nassau Street, - - - New York

NEW YORK, SEPTEMBER, 1920.

Economic Barriers Against the Public Health.

The Income Tax returns show that 103,000,000 persons out of a total of 105,000,000 in the United States are dependent upon incomes of $2,000 a year and less. Only 2,000,000 persons paid the $5,000,000,000 in taxes collected for the fiscal year ending June 30.

The total number of returns filed was about 4,000,000. C. B. Hurry, Assistant Commissioner of Internal Revenue, estimates that $2,000 a year represents the maximum income for about 98 per cent. of the population.

The millionaires were found to constitute a very small group, numbering about 20,000.

These returns throw a flood of light, it seems to us, upon the continued prevalence of diseases like tuberculosis, for the Labor Department *a year ago* estimated that a family of five persons needed at least $2,260 a year to live in "decency and comfort" in the city of Washington.

And this is not saying anything about the bearing of these facts upon the profound social unrest.

High wages must be going to a comparatively small group, about whom we hear much, while below this group there must be a vast and degraded proletariat, due allowance being made for small home owners with incomes around $3,000 whose exemptions leave them out of the tax net.

Think it over. The implications are profound and disquieting, while the lies about the true state of our affairs appear black indeed. Even the small home "owners" aforesaid stagger under mortgages which average about $5,000.

Public health may be purchasable, but not by those who have nothing.

Political Clinics.

The Third Party Convention at Chicago, in July, must have been a political menagerie indeed, and we are not judging it wholly on the basis of the jaundiced accounts in the press which touts for the old parties. Why do not our alienists and eugenists take such opportunities to study political paranoiacs in action? Here are vast clinics offering a wealth of material, in which are hawked a thousand panaceas, and from which go out the "metastases" that we encounter sporadically in interesting individuals.

We are not writing invidiously, for even political paranoiacs are the source of brilliant and beneficent doctrines as well as buncombe.

One might say that all the political geniuses are in the Third Party groups. From the old parties we get only buncombe, unrelieved by brilliancy of any sort.

Somehow or other we have a warmer feeling for the thinkers—erratic if you will—of the Third Parties than for the colorless and hopelessly sane gentlemen who conduct the well-known Punch and Judy show for the old parties.

Weak Feet and Indigency.

Medical men dealing with derelicts in the great cities are increasingly impressed with the part played by weak feet in the etiology of indigency. If men who fall naturally into the laboring class are unable to stand and walk upon their feet without undue fatigue they are likely to be thrown upon the mercy of relief agencies of one sort or another. The plight of these men seems inexplicable to many people except upon the grounds of laziness and other faults, but this very view is itself a proof of lazy thinking and lack of effort to find out the truth on the part of the critics themselves. Very much could be done for these victims of the industrial juggernaut to rescue them from the lodging houses and restore them to usefulness, but we shall doubtless continue to muddle along on this question and glibly ascribe the difficulties of these unfortunates to mental deficiencies, inability to adjust, pure cussedness, and a dozen other irrelevant things.

Wherein We Rock the Boat.

"Every age seems to have its peculiar measure of superstitions and follies, and our own age, which we may make roughly coincident with the rise of machine technology, has made science a fetish. It is probably true that the Middle Ages were priest-ridden, but that fact gives us no warrant for looking down upon them with pity. We are a little worse off, if anything, for where religious bigotry has collapsed we have replaced it with biogtry of a different kind. We are science ridden; and it requires no great powers of perception to see that science rampant—rampant medicine in particular—is every bit as tyrannical, and is considerably more absurd than the arrogant religions of the past. As the ordinary man of all times and ages appears to have a congenital itch for something or somebody he can bow down to and reverence, and as the ordinary man of this industrial era of the machine-shop and the motor-tractor appears to have found it increasingly difficult to bow down to and reverence the tribal god of a pastoral people (Thorstein Veblen has adroitly exposed this state of affairs), he has selected science for his ultimate source of authority. From the point of view of efficiency, increased production, and material wealth this conversion has considerable to be said in its favor, but from the point of view of the humanist, it is profoundly disquieting: precisely because it is more humil-

iating to see the human soul shiver before blue prints, laboratories and technical experts than to see it shiver before a God of Vengeance and a future Hell."

It seems to us that there is a lot of meat in the foregoing paragraph, which recently appeared in *The Freeman*. It has made us think seriously about the tyranny of the laboratory in the course of our own work. So enslaved are we by that clinical tribunal that we hardly dare to reach any conclusions at all until the archpriest of the test tubes and stains has spoken. Far be it from us to minimize the huge advantages that accrue from the laboratory, but nevertheless we insist that practically complete dependence upon it has spoiled our self-reliance in the presence of very many disorders. It is as though a paralysis had assailed us, when compared with the practitioners of the past. The latter may have lacked science, but they were rich in common sense and in human helpfulness. And we are constantly convicting folks who are healthy enough, practically speaking, of all sorts of diseases that they were blissfully unconscious of until they fell into our hands—and no harm done at that.

This is modern medicine, and we are afraid to think beyond it—or should we say behind it?

There is, of course, an economic (we do not say commercial) phase to the laboratory question. The laboratory is an institution that has come to stay, and hordes of people live by it. The quetsion is, has it succeeded in intimidating us to a point where we don't dare to call our clinical souls our own, and is this a wholly desirable state of affairs, if true?

It is all very well to insist that the laboratory is not responsible for the paralysis of practitioners—that there must be something the matter with them. Of course, the matter with them is that they are human, and the argument aforesaid is much like that of paternalistic governments in defense of their dealings with peoples alleged to be unfit for self determination.

Why laboratory routine in every case that comes along, instead of in instances where the indications are well defined? This ritualizing tendency seems indefensible to us; like a betrayal of bad faith, if you please; certainly a confession of utter incompetence.

The truth is that the laboratory game is overworked to a point only a little below that played by European statesment in their partition of political pies, and we do not for a moment imagine that the world is soon to see any change in these matters. In this respect at least we are like our British friends; that is, we can see facts, and, what is more, face them. We leave illusions to the worshippers at the shrine of modern science.

Miscellany

CONDUCTED BY ARTHUR C. JACOBSON, M. D.

Nationalization of Frenchwomen Proposed.

If editors must needs reflect upon the nationalization of women, and could put their anti-Bolshevist politics aside, they might find more authentic material in the files of the *Paris Médical*, a leading French medical journal. One of the editors, Paul Carnot, has been writing a series of articles on the subject, "How to Save Two Million French Women from Sterility." France has no such high birthrate as Russia, and if it is to continue to rank as a first class Power it must keep up its population. Dr. Carnot points out that France has two million more women than men today, and that if they are doomed to celibacy France will lose nearly six million potential children. The problem, he says, "demands an immediate solution, however that that may modify current ideas of the family and of social responsibilities. . . . No convention, moral or social, seems to us worth depriving impoverished France of six million births." So he attempts to work out a system by which maternity—for unmarried women—may be made "a remunerative feminine career." He suggests that "maternity volunteers" be called for and be paid by the state, special prizes to be awarded for the physically fittest children. It appears that his readers, especially feminine readers, have welcomed the project with enthusiasm. This is no mere figment of an editor's imagination, like the stories of Russia; nor do we quote it in any endeavor to prove French doctors and the French nation immoral and degraded. It is simply a part of the after-war population problem which confronts many European countries today. Another French project also has interest. The new French tax upon childless men and celibates—does it not look like a step toward the nationalization of men?

Tolstoy on Alcohol.

"I do not like people when they are drunk, but I know some who become interesting when they are tipsy, who aquire what is not natural to them in their sober state; wit, beauty, alertness, and richness of language. In such cases I am ready to bless wine."—*From "Reminiscences of Tolstoy," by Maxim Gorky.*

(Continued from page 214)

needed. Yet here comes a nice distinction between indolence and fatigue. Protracted fatigue, of course, impairs function and ultimately structure, a lowering of energy to the plane of incapacity. Spontaneity in urge, flashes of voluntariness, mark high energy tides, supply the means for renewing the contest while in the way.

Note a child at play. So long as spontaneity persists, so does the energy output. Here we see a typical picture of energizing and of instinctive renewals. While the urge lasts, so does evidence of pleasure in the doing. so soon as the urge lowers the child rests, lies down, sleeps anywhere, anytime. The glee, the gratuitous muscle action, is often quite purposeless, merely explosive, is displayed in shoutings, squeals surface play of motion, emotion, and in commotion when thwarted.

Charcot asserts that mental competitions in a child become automatically regulated. When the lesson is too difficult, it simply does not push on—it stops.

He likewise states that when a child comes to suffer harm from brain work this is solely due to extraneous urgings to overdo, through pressure of authority, incitement rousing the ambition, a persistence in urgings or fear of punishment. Thus a danger point may be reached.

Here we have in miniature a picture of adult adjustments to environmental stresses, the energy cycle is thus made plain, the performance and the renewal.

As "time the great healer," and tutor in wisdom, lays a restraining hand on the over-doer, he must obey the primal impulse to slow down, to trot at a soberer pace, to be content with what the organism can now do, in contrast with what it was formerly able to do with comfort each day.

The post-maturity adult must recast his habitudes upon a basis of shorter periods of work interspersed with longer periods of rest, nor can he work up to par every day—only half days or alternate days—so much a week. On this basis the total output may readily foot up to a former norm, and continue for many years. Employers of labor must inevitably come to recognize these biologic truths in their own interest.

In certain crafts, trades, occupations, the earning power is manifest through specialized automatisms, "working automatics," the product of psychomotor and ideomotor proficiencies, through innumerable repeated acts. These automatics are not stressful, merely wearisome. They do not drain the energy fund. Dr. Estes has made most impressive remarks on "The Last Quarter of an Hour" in surgical operations. Older men and women can earn precisely as much as younger and more vigorous ones. For example: a mail sorter takes five years to reach full proficiency and can keep up the work long after younger men would become overwhelmingly weary or exhausted. It is a cruel injustice both to him and the department to enforce an arbitrary age limit —as Burleson has recently done.

High pressure activities are entirely different. Experts in efficiency understand and fully appreciate all this.

The Heart Beat and Circulatory Cycles.

Among the important cycles of energizing, that of the heart beat stands supreme. It is mentioned merely to call attention to certain well-known facts of interest to the physician though less well remembered than would seem, since it appears to be a novelty to many. It is of particular significance for laymen who wish to know the "reason why" in life's processes.

The heart is the one organ which never sleeps, works incessantly, always strives to do its best, on it life and livingness depends utterly, yet it gets the smallest rest of any. During the negative phase, it does, however, rest.

The only surcease for the heart muscle comes during the interval between the push and the pull, the "ub" and the "dup," the systole and diastole. The more completely the push and the pull is accomplished, the more perfect and prolonged is the resting phase. Hence the character of the heart sounds and of the pulse, hence of blood pressure, ascends in economic value. Whatever impairs the definiteness and certitude of rythm and periodicity, tends to mar this resting stage, or energy renewal.

The heart muscle must likewise be emptied and supplied with blood to nourish it, and to get rid of overcharged blood. The myocardial squeeze should be ephatic and finished, to empty the heart structures of contained blood.

In considering "exercise tolerance," Thomas Lewis formulates certain rules among which are, that in "elderly subjects without signs of structural disease, but with poor exercise tolerance, the heart should be regarded as the probable seat of mischief."

The chief value of digitalis lies in its power to control the ventricular rate when auricular fibrillation has come, its influence rests the heart by prolonging the diastole. Digitalis is thus not so much a cardiac stimulant or tonic, as a powerful hypnotic, extending the heart's period of sleep.

Posture, or attitude assumed, exerts a uniform and significant effect on this rythmicity, and acts as a test of competency. The normal ratio of increase of pulse rate, pulse tension, and blood pressure must be preserved, otherwise capacity for endurance is reduced for the reason chiefly that the heart is unable to secure needful rest pauses while undergoing exertion.

This function of periodicity or rythmicity becomes a basis for comparison beween individuals differing as to their essential dynamics, their constitutional stamina and also fluctuations in energy content, in losses and in replacements; also for fluctuations in the same individual under varying diurnal circumstaces, and likewise under chronological advances. Since it is most desirable to have at command fair functional tests to apply to the cardio-vascular valency, these might be sketched here. These tests, as set forth by Edward C. Schneider, are designed for use in measuring aviators (a selected group remember), and for industrial efficiency, and the tests may need modifications for those of full or late maturity. Meanwhile it is fair to assume that the principles involved are the same, or closely similar.

The functional changes of the body brought about by regular physical training will serve as a basis for a number of physicial efficiency tests.

Cardio-vascular Rating as a Measure of Physical Fatigue and Efficiency.*

"Certain differences between active and inactive animals throw light on functional variations. The wild hare, which lives an active life in the open, and the wild rabbit, which lives an inactive life in seclusion and does not venture far from its burrow, have been compared by Dreyer, of Oxford University. He found that a wild hare has double the blood volume, 30 per cent. more hemoglobin and three times more heart muscle, than a wild rabbit of the same weight. The rate of heart beat of the wild hare is about 68, and of the wild rabbit about 200 per minute. The respiration rate of the hare is between 18 and 20, of the rabbit about 50 per minute. Furthermore, the meat of the hare is dark, that of the rabbit light in color. No doubt, similar differences exist between an athlete and a sedentary worker, and there is reason to believe that these functional differences vary to some extent as the health and fitness of the individual person vary. . . We are here concerned with the cardio-vascular changes only so far as they give evidence of fatigue and health changes in the body. . . .

"The Pulse Rate as a Criterion of Health."

"(a). The Postural Rates.

". . . From extensive experience, it was concluded that a horizontal posture pulse rate between 40 and 80 and a vertical posture rate between 50 and 90 were favorable health signs. . . . The heart rates serves as a fair indication of condition; a high heart rate indicates poor condition, and a heart rate with wide variations between the horizontal and standing positions suggests a poor vascular adjustment. . . .

"During repeated periods of training of a single subject, Dawson found that training slowed the resting pulse rate as much as 9 beats per minute, and that this especially influenced the noon and afternoon pulse. . . . In young men, the normal average pulse rate has been reported to be 78.9 standing, 70.1 sitting and 66.6 lying. The continued practice of some form of exercise, such as rowing, extending over a period of years, may progressly lower the rate of heart beat. Thus Mitchell found the average rate of the athlete's pulse during the first year of training was 69, in the second year, 64.5, and in the third year, 56.8. According to Linhard, not only is the pulse less frequent, but the output of the heart per minute is slightly larger in the trained than in the untrained man. . . .

"With improvement in physical fitness the heart beats less frequently and more efficiently. It follows, therefore, that the pulse rates in the reclining and standing postures may at times give useful hints as to the degree of fitness and health. That the altered physical condition may not be evidenced by pulse rate changes in both of these postural positions was demonstrated by Boney, who found, in some tired, listless, depressed and fatigued patients, that the pusle rate was normal while lying down, but was abnormally rapid on standing: in

*Abstract of points from paper with this title by Edward C. Schneider, Ph.D., J. A. M. A., May 29th, 1920.

several the standing rate was as high as 130 or 140 beats per minute.

"(b). Pulse Rate Increase on Standing.

"The difference between the pulse rates in the standing and reclining postures has been found to be a useful index of physical fitness. According to Vierordt, the average postural increase is from 12 to 14 beats. Crampton reported that in vigorous subjects the heart rate may not increase on standing, while in wearied subjects it may increase as much as 44 beats per minute. Meylin believes a standing increase of not more than 16 beats is a favorable sign of physical efficiency. Parkinson recently reported that in twenty healthy soldiers an average increase of 10 beats was noted when the recumbent and standing rates were compared. Geigel considers that a variation of more than 30 between lying and standing pulse rates indicates weakened heart function. It is now recognized that in states of debility the postural difference may be as much as from 30 to 50 per minute. A slow vertical postural pulse rate with a small difference between the two are usually signs of excellent health.

"(c). Exercise Pulse Rate. According to Bowen, the rapidity of the pulse during exercise is chiefly determined by (1) the speed of movement; (2) the resistence encountered; (3) the condition of the individual, and (4) age. . . .

"The increase in the pulse rate after a certain amount of work is greater in an untrained than in a trained person. Hartwell and Tweedy, comparing athletic and non-athletic women, found that running up and down stairs accelerated the heart rate an average of 10 beats more in the non-athletic women. Cotton, Rapport and Lewis believe that the average height to which the pulse rate is raised at the cessation of effort may be taken as a gage of the degree of the distress produced, and that the amount of distress is determined by the degree of health. . . .

"(d). The Decline of the Pulse Rate After Exertion.—A widely recognized sign of physical condition is the time required by the pulse rate to return to normal after effort. . . .

"It should be emphasized that while the several pulse rate criteria of fitness may all be found in a single person, not one, or even any two of them, is found to be an absolute test. In forming a judgment as to the physical condition of a man, it is best to consider together the postural rates, the increase on standing and after exercise, and the time required for the rate to return to normal after exercise."

In disordered action of the heart, the factors are primary, secondary and common denominators. (1) Hereditary taint, (2) acquired infection, accident or injury and many others. (3) Some common factor which leads to typical manifestations of rapid or slow pulse leading to stresses or exhaustion which—as L. M. Murray says (Boston *Medical Journal*, Dec. 14, 1918)—is to be found accredited to imbalances between the sympathetic and autonomic nervous systems. Normally the activities of these two nervous systems remain in poise; in disordered action this balance is upset, the sympathetic being in the ascendency.

Metabolic factors play the chief part. In health the circulating fluids contain nutritional and chemical materials required by the body nicely balanced for the mutual benefit of different cells and functions, the products of cytoplasmic activty of the various cells. Some are only metabolites, while others are specific chemical substances. Each depends on the others, and in all a pure state is demanded for normal performances of function. Here we come back to the problem of the ductless glands and their variations in functioning.

The Physician's Library

Dermatology, by J. Darier. Second Edition. Translated and Edited with Notes by S. Pollitzer. Philadelphia: Lea & Febiger, 1920.

This volume contains 750 pages and is divided into three parts, viz.: I. Morphology of the Dermatoses; II. Nosology of the Dermatoses, and III. Therapeutic Notes.

In its subdivision under morphology it is very unique. The classification as used by Darier is much more extensive than the one of Hebra to which we are accustomed. In this part there are twenty-two chapters, each one representing a division of his classification. Darier has here made a good book for differential diagnosis, as every disease producing a lesion of a certain morphology is included under its head. Where the same disease produces polymorphous lesions, e. g., syphilis, it is also included under each different heading.

In Part II, where we have the nosological classification, the diseases are less easily followed because during their descriptions references are repeatedly made to Part I for the more complete description under morphology.

Part III contains the therapeutic notes, the prescriptions in which are not of the type used in this country, but are extremely interesting and are not without some good suggestions.

In general the text is well written, including also the pathological descriptions which are unusually brief but complete. The illustrations throughout the book are excellent.

The additions by Pollitzer are frequently very essential to bring out clearly the meaning to be conveyed by the text. He has made quite an addition to the chapter on syphilis which suggests a different method of salvarsan treatment from that generally used, and for which he claims excellent results. The great difficulty here is in keeping the patient under active treatment for so long a period as three years.

The book is one of great value to the teacher and student of dermatology, but for the general practitioner it is confusing, and for the specialist it is too elementary. Its values from the standpoint of differential diagnosis, however, can not be too strongly emphasized.

A Text-Book Upon the Pathogenic Bacteria and Portozoa. By Joseph McFarland, M.D., of the University of Pennsylvania. Ninth edition, thoroughly revised. 858 pages, with 330 illustrations. Philadelphia and London: W. B. Saunders Company, 1919.

This edition brings the subject up-to-date and makes a work more valuable, if such be possible, than its predecessors. The author explains that his work of revision was done in various army camps, while serving as an army medical officer, but despite these handicaps the book shows every indication of superiority and general excellence.

The Diseases of Infants and Children, by J. P. Crozer Griffith, M.D., Ph.D., Professor of Pediatrics in the University of Pennsylvania. Two octavo volumes of 1,542 pages, with 436 illustrations. Philadelphia and London: W. B. Saunders Company, 1919.

We recall nothing in pediatric literature in recent years which can compare with this work. The first division of Volume I is devoted to the anatomy, physiology and hygiene of early life, feeding and diet, and characteristics of infantile diseases. The second division covers diseases of the newborn, infectious and general and nutritional diseases and diseases of the digestive system. Volume II discusses diseases of the respiratory, circulatory, genito-urinary and nervous systems, as well as diseases of the muscles, bones, joints, blood, spleen, lymphatic glands, ductless glands and internal secretions and of the skin, eye and ear.

Many years of teaching and pediatric practice have made these volumes possible and many years have also been devoted to the preparation of the subject matter.

It is easy to assert, with little chance of refutation, that this work will long stand out as the premier treatise on pediatrics. Every disease to which childhood is heir and every condition, medical and surgical, from which a child may suffer, is discussed carefully and elaborately.

The author has taught in the University of Pennsylvania for 30 years and he has crowned his work with a literary monument of which he and the medical profession may well feel proud.

The illustrations are numerous and enlightening.

Symptoms in the Diagnosis of Disease. By Hobart A. Hare, M.D., of Jefferson Medical College. 8th edition. 565 pages. Philadelphia: Lea & Febiger, 1920.

The eighth revision of this excellent book lays especial emphasis upon the study of the series of symptoms. Indeed, the author plainly and truthfully states that "it is as futile for a

physician to attempt to base a diagnosis upon a single symptom as for an architect to attempt to determine the appearance of a house by seeing one of the stones which has been removed from its walls."

With this thought ever in the forefront the author has erected a splendid structure. He makes diagnosis comparatively easy and the application of the findings a matter of the knowledge of therapeutics.

Believing that laboratory technique should be considered quite apart, he has omitted reference to it in favor of the extensive literature on the subject.

The practice of medicine will be made far more simple if the physician will carefully study this splendid volume and apply the precepts laid down therein to his individual needs.

Arteriosclerosis and Hypertension. By Louis M. Warfield, M.D., F.A.C.P. of Milwaukee. 3rd edition. 265 pages. St. Louis: C. V. Mosby Co., 1920.

Regarding arteriosclerosis as a definite etiologic factor instead of a disease, the author has presented a book of great interest, although some of his points will not be accepted by other authorities. As a matter of fact, the views presented are largely those of the author, with little reference to outside workers in the same field. This edition is superior in value to the others and discusses the subject clearly and practically.

Correspondence

Effects of Barometric Pressure Changes.

To the Editor, THE MEDICAL TIMES:

A correspondent asks if changes in barometric pressure affect the bacterium content of the air. The answer is, Yes, when the humidity of the air is materially greater than 85 per cent. a noticeable increase in the number of floating micro-organisms is apparent. Now, such organisms may be collected on slides exposed to the free air either by contact, or because they become nuclei of condensation. The important fact is that, with a sudden drop in pressure, condensation brings them down in much greater number. I have no figures nor statistics of any sort to corroborate this statement; I merely express it as an observed fact. Perhaps a gradual fall in pressure may have the same effect; I do not know. So far as my specific work is concerned floating micro-organisms, as well as those that have settled upon a slide, are nothing more than dust particles.

The subject questioned by the correspondent is interesting, and more specific knowledge concerning it would be of great value to the medical profession. The moral is obvious: If the physician were to acquaint himself with the facts which daily observations of temperature, humidity, and pressure reveal he might profit by them. Furthermore were the meteorologist to acquaint himself with an interpretation of his observations which the physician needs but does not get, his work might be better appreciated.

J. W. REDWAY.

Meteorological Laboratory, Mount Vernon, N. Y.

The Need of Societies for Prevention.

To the Editor of THE MEDICAL TIMES:

Much has been written of late on the conservation of childhood. One medical journal says "the appalling loss of babies is due largely to improper care, or feeding or both," and makes an earnest appeal to "conserve the nation's human resources and build up virile citizenship."

Is it in reason, is it logical, is it wise to expect or attempt to build up a "virile citizenship" from the propagation of syphilitic, tubercular, feeble-minded, epileptic, insane, drug-fiends, criminals, degenerates, etc., progenitors? What would be thought of the intelligence of the farmer who would hope to improve his stock by breeding from *scrub*, progenitors?

Is it not safer and wiser to trust to the beneficient law of the survival of the fittest, than to leave the subject in the hands of the sentimentalist? If most of the charity associations could be converted into prevention societies, what a valuable work they would accomplish in "building up a virile citizenship." The philanthropist need not be alarmed the necessary poor, crippled and unfortunate, will always supply material for the exercise of his or her beneficence. The taxpayer is loud in his complaint of his unnecessary burdens.

The time is near at hand, when relief from unnecessary taxation will be demanded. When the taxpayer fully appreciates the enormous amount of his present burdens, go to the upkeep of unnecessary eleemosynary institutions there will be hopes of a sane control of the present unwise propagation of our race.

W. F. McNUTT, Sr., M.D.

San Francisco.

Public Health

Health Classes for Children

The health class is an agency for general family adjustment in the matters relating to childhood. It possesses a vantage point for the prevention of tuberculosis, cardiac diseases and the development of defects of sight and hearing; as well as the correction of postural errors, and incipient deformities of the feet and spine. In a remedial way, it eliminates or palliates dietetic errors and lessens the likelihood of malnutrition affecting other children of the household. Health classes to function properly should be articulated with a general hospital or dispensary, the home and various agencies which can supplement and augment the work of the class.

To provide for these articulations, it is essential to have a social service nurse and one or more friendly visitors, who can correlate the various agencies and activities. The knowledge and experience of social service nurses, broad as they may be, are insufficient to enable them to deal satisfactorily with many home problems. For this reason a teacher of domestic sciences and arts is almost a necessity. In addition to her special work with the home, it is designed to arrange for various classes for mothers and older children, with a view to instilling a working knowledge concerning the numerous phases of home making that are so intimately related with family health.

In his own classes the author has established a certain amount of competition among mothers by having 3 types of admission cards, indicating 3 relative degrees of proficiency in carrying out the instructions given, and in coöperating towards a higher standard of health habits and methods of living. Mothers are promoted and their own efforts determine the rating deserved.—(*Arch. of Pediatrics*, March, 1920.)

Educators Urge Social Hygiene

At the conference of the National Education Association in Salt Lake City in July, the subject of social hygiene had an important place in many of the discussions.

The educators went on record as favoring 'the teaching of social hygiene in all teacher-training institutions, and the cooperation of teachers with all organizations of parents in the instruction necessary to the inculcation of sound ideas and attitudes in children and youth as to the essentials of social hygiene."

The full text of the resolution submitted follows:

WHEREAS, (a) Social hygiene has as its general purpose the perpetuation of the family as a social unit in such a manner that it will contribute in the largest way to the happiness and usefulness of its individual members, and the best development of the human race.

(b) The advancement of social hygiene is dependent fundamentally upon the inculcation of sound ideas and attitudes in children and youth.

(c) Many parents are not adequately qualified to instill in their children a point of view that will be productive of the best understanding and guidance in the preparation for marriage and parenthood.

(d) The teachers of the country are inevitably faced with the opportunity and responsibility for exercising leadership in the educational side of the social hygiene program. Therefore, be it

RESOLVED, That the National Education Association urges upon all of its members the desirability of informing themselves as individuals regarding the essentials of social hygiene, so that they may aid parents and pupils as called upon to do so. —(*Soc. Hgy. Bull.*, Vol. VII, No. 8.)

Co-Ordination of Child Health Activities

Organizations doing health work among children are more and more coming to appreciate the pressing need of correlating their activities. Not only is there much duplication and, therefore, much waste of effort; but it is felt that many opportunities for developing well rounded programs for the health of children are thus lost.

The American Child Hygiene Association, American Red Cross, Child Health Organization of America, National Child Labor Committee, and the National Organization for Public Health Nursing have held several conferences with a view as to how such correlation may best be effected.

As a result, the representatives of these organizations have formed a Council for Co-ordinating Child Health Activities, to which will be added gradually other national organizations carrying on well defined programs for the health of children. The main objects of the Council are: (1) To define and develop so clearly their own work that each organization will be working in harmony and co-operation with all the others; (2) to develop new methods which will lead to meeting more effectively some of the special problems still unsolved; and (3) to

afford an opportunity for any organization dealing with the health of children to submit its plan and program for suggestions.

This action, which bids fair to be a long step in the coördination of child welfare activities, is to be highly commended. The widespread interest in child welfare, and especially in child health measures, has brought into being scores of organizations, local, State, and national, which have been working with earnestness and zeal for the benefit of the child. Many of these efforts have been handicapped for lack of funds and by their failure to co-ordinate their work with other activities. There is much work to be done and no organization need fear that opportunities will not be at hand. Beginnings only have been made in the movement for effective child welfare work. Many untouched fields and many half developed fields of physical, mental and moral care of children remain untilled. It may be confidently expected that with co-ordination and co-operation the boundaries of child acre may be extended.—(*Mod. Med.*, July, 1920.)

Rochester Bureau Gives Syphilis Course

The intensive course in syphilis conducted in June under the direction of the Health Bureau, Rochester, N. Y., was most successful, according to physicians who were present. Every doctor in attendance took blood for Wassermann tests and had an opportunity to closely examine patients and their histories and record cards; every one had the chance to become familiar with the technique of preparing and administering arsphenamine, to see and do luetin reactions, and to read them. In addition, Dr. George W. Goler, health officer of Rochester, who organized the course, provided motion pictures on various phases of the subject. The course covered also a study of the chemistry and cytology of spinal fluid and the making of spinal punctures.

This intensive post-graduate work has proved its value, says Dr. Goler, and a similar course will be given in the fall under the direction of Dr. Joseph Roby.

Rochester opened its first venereal clinic about six years ago in the Health Office. From that, reports the Bureau, has grown a consultation with four associated clinics in three general hospitals and one dispensary in a populous district, dealing with measures both of treatment and prevention.—(*Soc. Hyg. Bull.*, Aug., 1920.)

The Venereal Disease Campaign in North Carolina

North Carolina is considered to have one of the most thoroughly organized health departments, and its activities along the line of venereal disease control have been of equally high standard. A recent issue of the *Health Bulletin* published by the State Board of Health contains an excellent description of the venereal disease menace and the methods pursued by the Bureau of Venereal Disease in combating this menace.

An interesting reference showing the effect of the venereal disease problem in its relation to child life and reproduction is contained in an article by Dr. Millard Knowlton chief of the Bureau of Venereal Disease.

In a study of syphilis in relation to infant mortality Dr. P. C. Jeans, of St. Louis, concluded that from 10 to 20 per cent. of adult males and 10 per cent. of married women are syphilitic; that 75 per cent. of the offspring of syphilitic families are syphilitic; that 30 per cent. of pregnancies in syphilitic families result in death before term, as against the normal rate of 10 per cent.; that 30 per cent. of living children in syphilitic families die in infancy; that 25 to 30 per cent. of syphilitic infants die of syphilis; that but 17 per cent. of all pregnancies in syphilitic families result in healthy children who survive infancy; and that about 5 per cent. of all infants are syphilitic.

In North Carolina as many as one thousand cases of venereal disease are reported monthly by physicians to the Bureau of Venereal Disease, while druggists have reported as many as two thousand sales of venereal disease remedies per month. A very significant fact is that about one-half the cases of infection are innocently acquired, and nearly all the innocent victims are women and children. "Surely no one," says Dr. Knowlton, "would wish to have innocent women and children suffer unnecessarily for the conduct of the husband and father; yet this is exactly what has happened as a result of our past attitude toward venereal disease. The modern view that such disease is incidental to sex irregularity, rather than a punishment therefor, has resulted in an entirely different attitude towards infected persons."

The three main lines of activity in the campaign to combat venereal disease are medical measures, including the treatment of infected persons to render them non-infectious, resorting to quarantine when necessary; repressive measures against prostitution, which is considered a great source of venereal disease; and the educational measures for the purpose of disseminating accurate information concerning venereal diseases and arousing the public to adopt vigorous methods for their prevention.—(*Mod. Med.*, July, 1920.)

Team Work Among Health Agencies

In an encouraging number of States we find the beginnings of coördination between the various health activities. For a long time, most of the agencies have pursued their ways, each for itself. It has been a rather common thing to find independent, overlapping, and even conflicting efforts between the organizations for child welfare, tuberculosis, public health nursing, mental hygiene, social hygiene, and the official agencies.

Organizations for coöperation now exist in Kansas, Maine, Ohio, Delaware, Massachusetts, and doubtless other States. The latest addition to the list is Massachusetts, where the Massachusetts Central Health Council of State-wide agencies was organized in May, 1920. Each of the constituent organizations sends two representatives to the Council. Every two months the latter meets and discusses the respective activities.

It is to be emphasized that the work of this Council is not repressive. Its functions are advisory, if anything, the programs of the constituent organizations will be expanded, because of the opportunities for service created through the suggestions of other organizations. The public health nursing organization, for example, will find that the cancer society has a message which should be carried to the public through public health nurses.

The initial activities of this organization will be to bring representatives from the various fields together to talk things over. Each organization will present its programs and problems for discussion. Other activities will, however, suggest themselves as time goes on. For example, the influence for legislation of the combined organizations will be stronger than of the constituent units. It may be found advisable later to conduct one campaign for funds instead of the rather bewildering number of the past. Finally, organization of this type tends to bring about a more wholesome relation between the official and the non-official health worker. The present regrettable condition in this regard has been largely due through failure to get together and talk things over. As a consequence there is no agreement as to what are the respective duties of the official and the voluntary health worker.

From starting out as forums for the discussion of problems of coming interest it is not inconceivable that some of the constituent organizations may find it advantageous to amalgamate, or to establish a federation involving firmer ties than at present. In the beginning, however, Councils like this will do well to leave to their constituent organizations a maximum autonomy.—(*Am. Jour. Pub. Health*, July, 1920.)

Anti-Malaria Campaign in South Georgia.

For many years malaria has caused a loss of six million dollars, and, among the negroes alone, a loss of over a million and a half working days each year in South Georgia. It infects from twenty to one hundred per cent. of the people in the communities, and caused the death of 800 people yearly.

Recently the American Red Cross, in co-operation with the State Board of Health, the Georgia Association, the U. S. Public Health Service, and several large corporations, has undertaken an extensive anti-malaria campaign. Moving pictures, lectures and the press have all been utilized in calling the attention of the people to the importance of destroying the mosquito and all its breeding places.

The campaign has already been very successful. Three teams that went out early in April visited more than twenty counties during that month, giving from three to five "shows" in the rural sections. One team reached 4,300 people, and the others were similarly successful. The cities were avoided in favor of the rural districts where both the need and the interest were greatest. Hundreds of people drove to the schoolhouses from fifteen to twenty miles around, and one old lady who had never seen a moving picture before was brought lying down in an automobile.

The report of one of the teams shows that Fort Gaines, Ga., has agreed to raise $2,500 to stamp out malaria, and will get a public health officer; that Randolph county has applied for a Public Health Nurse and will ask the grand jury to recommend the Ellis health law and the appointment of a public health officer; that Terrell county will get a sanitary engineer to stamp out malaria; that Thomas county is raising $5,000 to show the outlying districts what can be done; that Colquitt county is asking for a Public Health Nurse; that in Moultrie the chamber of commerce will ask the city council for an appropriation to fight malaria; that in Lee county, Smithville and Leesburg will issue $6,500 in bonds to fight malaria; that in all of these counties, and others visited, the people have been educated and aroused.

Three or four teaspoonfuls of sugar of milk in a cup of hot water, taken on an empty stomach in the morning, will move the bowels in two or three hours.